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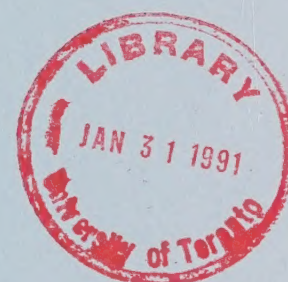
BEFORE:

A. KOVEN

Chairman

E. MARTEL

Member



FOR HEARING UPDATES CALL (COLLECT CALLS ACCEPTED) (416) 963-1249

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HEARING ON THE PROPOSAL BY THE MINISTRY OF NATURAL
RESOURCES FOR A CLASS ENVIRONMENTAL ASSESSMENT FOR
TIMBER MANAGEMENT ON CROWN LANDS IN ONTARIO

IN THE MATTER of the Environmental
Assessment Act, R.S.O. 1980, c.140;

- and -

IN THE MATTER of the Class Environmental
Assessment for Timber Management on Crown
Lands in Ontario;

- and -

IN THE MATTER OF a Notice by the
Honourable Jim Bradley, Minister of the
Environment, requiring the Environmental
Assessment Board to hold a hearing with
respect to a Class Environmental
Assessment (No. NR-AA-30) of an
undertaking by the Ministry of Natural
Resources for the activity of timber
management on Crown Lands in Ontario.

Hearing held at the offices of the Ontario
Highway Transport Commission, Britannica
Building, 151 Bloor Street West, 10th Floor,
Toronto, Ontario, on Tuesday, January 22,
1991, commencing at 9:00 a.m.

VOLUME 280


BEFORE:

MRS. ANNE KOVEN
MR. ELIE MARTEL

Chairman
Member

A P P E A R A N C E S

MR. V. FREIDIN, Q.C.)	
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I N D E X O F P R O C E E D I N G S

Witness:

Page No.

CRANDALL BENSON, Resumed 50197

Continued Cross-Examination by Mr. Freidin 50197

I N D E X O F E X H I B I T S

<u>Exhibit No.</u>	<u>Description</u>	<u>Page No.</u>
1657	Six page written submission by Mr. Welyhorskyj.	50197
1658	MNR interrogatory No. 43 and answer thereto. (Panel 5)	50207
1659	One-page document entitled Forestry in the Provinces.	50267
1660	Document entitled Stocking Standard Comparison, source being Exhibit 558, 557, 494 and MNR Panel No. 4.	50279
1661	Letter from the Federation of Ontario Naturalists signed by Mr. Huff to the Ministry of Natural Resources dated December 23rd, 1987.	50282
1662	Four-page document consisting of Table 4.4 which is the report on renewal and maintenace operations from the Kiashke unit for the term 1983 to 1988; Table 4.19, forecast of renewal and maintenance operations for the five-year term, 1988 to 1993; page 29 of the timber management plan for the five-year term 1988 to 1993; Table 4.1.2 dealing with operational prescriptions for areas of concern.	50291

1 ---Upon commencing at 10:35 a.m.

2 MADAM CHAIR: Good morning.

3 Good morning, Mr. Benson.

4 THE WITNESS: Good morning, Madam Chair.

5 CRANDALL BENSON, Resumed

6 MADAM CHAIR: Before we start I want to
7 put something in as an exhibit. It is a letter Mr.
8 Welyhorskyj and you might remember that Mr. Welyhorskyj
9 made a presentation to us in Espanola and he had sent a
10 written submission that he wishes to enter at the
11 hearing and we will give this an exhibit number. This
12 will become 1657 and it is an 11-page written
13 submission from Mr. Welyhorskyj -- there are two
14 copies, sorry, that's a six page written submission.

15 ---EXHIBIT NO. 1657: Six page written submission from
16 Mr. Welyhorskyj.

17 MADAM CHAIR: Mr. Freidin?

18 MR. FREIDIN: Thank you.

19 CONTINUED CROSS-EXAMINATION BY MR. FREIDIN:

20 Q. Mr. Benson, could you turn to page 66
21 of your witness statement, please, Exhibit 1604A.

22 MADAM CHAIR: Which page was that, Mr.
23 Freidin?

24 MR. FREIDIN: Page 66.

25 Q. In the last full paragraph you

1 indicate that:

2 "Intensive silvicultural activities
3 strive to increase the production of a
4 species from an area..." and you go on
5 and make other comments about that.

6 Mr. Marek in his evidence talked about
7 intensive silviculture and put forward the concept of
8 identifying areas which would be set aside for
9 intensive single-purpose forestry. For the single
10 purpose of forestry is what I understand him to mean.

11 Do you use intensive silviculture in the
12 same way as Mr. Marek?

13 A. I presume by setting aside for
14 forestry you would mean just for the production of
15 trees. With that line, yes, there could be certain
16 areas where if it's economically feasible you could
17 have intensive forest management practised on areas
18 that are capable of producing a forest.

19 Q. And do you support Mr. Marek's idea
20 of actually setting aside areas and saying these are
21 areas where the single purpose to be carried out will
22 be intensive silviculture?

23 A. I think certain areas should or could
24 be set aside where you could practise intensive forest
25 management. Probably where I would vary with George is

1 on the economics of it, where I would want to see that
2 it is economically viable.

3 Q. Thank you. Could you turn to page
4 127 of your witness statement. You have quoted from
5 Farmer, the first indented quote, and can I take it
6 that you referred to that quotation because you agree
7 with the content?

8 A. Yes, with the emphasis on the first
9 sentence -- or first part of the sentence up to the
10 first comma.

11 Q. All right. So you agree with it with
12 emphasis on the first part. The part that you agree
13 with but you don't want to emphasize says:

14 "Planting should be considered as a tool
15 for rectifying silvicultural failure, for
16 obtaining regeneration in inherently
17 difficult situations and for changing
18 species composition."

19 Are you able to provide any advice on
20 what might be referred to when Farmer says that:

21 "Planting should be considered...for
22 obtaining regeneration in inherently
23 difficult situations..."?

24 What sort of situations do you believe
25 are being referred to there?

1 A. I'm not exactly sure what he would
2 mean by that particular statement.

3 Q. In Exhibit No. 1654, which are the
4 interrogatories and the answers to the interrogatories
5 asked by the Ministry of the Environment for this
6 panel --

7 MADAM CHAIR: 1654?

8 MR. FREIDIN: That's my information,
9 1654.

10 MS. SWENARCHUK: These are MOE
11 interrogatories?

12 MR. FREIDIN: MOE interrogatories, yes.

13 MS. SWENARCHUK: Do you have it?

14 THE WITNESS: (nodding affirmatively)

15 MR. FREIDIN: Do you have it?

16 MADAM CHAIR: Yes, we do, Mr. Freidin.

17 MR. FREIDIN: I will just wait for Ms.
18 Swenarchuk to get her copy.

19 MS. SWENARCHUK: Proceed.

20 MR. FREIDIN: Q. If you go down to the
21 second paragraph of answer 7(a), you state in the last
22 sentence:

23 "Generally the more fertile the site the
24 more difficult it is to obtain the
25 original conifer composition with the

1 exception of balsam fir."

2
3 MADAM CHAIR: Page 8, Mr. Freidin?

4 MR. FREIDIN: Page 8.

5 MR. FREIDIN: Second paragraph under
6 7(a):

7 "Generally the more fertile the site the
8 more difficult it is to obtain the
9 original conifer composition with the
10 exception of balsam fir."

11 Could you explain why it is difficult to
12 obtain conifer regeneration in those situations, and
13 perhaps you could start off by describing these more
14 fertile sites that you refer to?

15 A. I gave the example above that in the
16 middle of that paragraph of white pine and how it would
17 be difficult to regenerate it.

18 I was also thinking of upland conifer
19 sites in the boreal forest where it can be difficult to
20 obtain conifer back on the site because of the hardwood
21 competition you can get.

22 Generally the more fertile site the more
23 vigorous the hardwood competition is, and the difficult
24 part when you are trying to regenerate the site
25 naturally is, how do you create the site conditions

1 that are conducive to regenerate the species that you
2 want back on that site.

3 Q. Without also perhaps creating a
4 condition which is amenable for the regeneration of the
5 hardwood competition?

6 A. Correct.

7 Q. I suggest to you that when Farmer,
8 and the quote on page 127 says:

9 "Planting should be considered...for
10 obtaining regeneration in inherently
11 difficult situations..." if what he
12 meant was in the difficult situations you described;
13 i.e., an rich upland sites, you would agree that
14 planting in fact should be considered for obtaining
15 regeneration on those sites?

16 A. He might possibly have been
17 considering that. I don't know. I'm not sure --

18 Q. Let's forget what he says. Would you
19 agree with me, sir, that because of the difficult
20 situations you have described on an rich upland sites
21 that planting should be considered for obtaining
22 regeneration?

23 A. I think it's one alternative, but I
24 think there are other ways that you can go about it.
25 For example, in Alberta, what they are trying with some

1 of their mixedwood sites, which would be their richer
2 sites, they are taking a different approach for
3 harvesting the area where they are trying to go in and
4 harvest the hardwood first in order to open the stand
5 up in order to get conifer regeneration to come back
6 in. Then the second harvest would be the mature
7 conifer on the area after they have established some
8 natural conifer regeneration.

9 So I think you can't just narrow it down
10 and say planting is the only alternative. What I tried
11 to point out elsewhere, too, is we haven't really
12 examined all the alternatives for natural regeneration
13 and some of these difficult areas would require more
14 examination to determine, well, what is the best method
15 to use to get the natural regeneration back on those
16 areas that you want.

17 Q. Well, Mr. Benson, while one is
18 experimenting with natural regeneration to see what
19 method might bring back the conifer, do you believe
20 that there should be an option at least available to
21 foresters to choose to plant -- harvest and then plant
22 some of these rich upland sites without trying natural
23 first?

24 A. I would like to see it limited. If
25 you made -- if those areas where your more productive

1 areas that you decided were to going to be set aside
2 for forest production, timber production, the intensive
3 management and they were economically worthwhile to
4 manage that way, then I think I would agree with that.

5 Q. Is that statement made on the
6 assumption that in all the other areas the areas that
7 Mr. Marek called multi-purpose forestry that natural
8 regeneration will, in fact, give you acceptable results
9 on all sites and with all species?

10 A. Hopefully it would give you the best
11 results. As I said, we have a lot to learn in the area
12 of natural regeneration; what is the best method to get
13 the best results in a particular area. So I couldn't
14 say it would be 100 per cent successful by any means.

15 Q. When you say we have to learn, I take
16 it then that you are saying that natural -- you are
17 hopeful that natural will work in all those cases where
18 you tried in multi-purpose forests, but we have to wait
19 and sort of experiment to see whether, in fact, that is
20 the case?

21 A. Experiment and observe. Part of the
22 problem is with time harvesting methods have changed,
23 harvesting equipment changes, the way that they
24 approach harvesting in areas changes and research quite
25 often has been designed around a particular harvesting

1 method, but it may not work under another particular
2 condition and I think we need more research on the area
3 of, what are the site conditions we are trying to
4 achieve and then relate that to the type of equipment
5 being used.

6 Q. Thank you. I understood from your
7 evidence the other day that intensive silviculture is
8 not warranted when, in fact, the net present value
9 calculation comes out to be negative; is that correct?

10 A. That's correct. And I think part of
11 the problem when you are doing that calculation, the
12 way I did it anyway, is based upon the stumpage rate.

13 And, of course, if you change the
14 stumpage you can change your net present value
15 calculation possibly to a positive value. So it is
16 linked up with the value of the timber, too. If the
17 timber had more value, you could possibly get a
18 positive net present value in some of those situations.

19 Q. What was the value of the timber that
20 you used for the purposes of your calculation?

21 A. For which particular...

22 Q. I think I understood you to have said
23 that you used stumpage in the way -- as the value and
24 the way you did that you came to the conclusion that
25 you used natural, and I just want to confirm -- I will

1 put the question perhaps more directly.

2 Is the value that you used for the timber
3 when you did your calculation stumpage or was it
4 something different?

5 A. The value I used was stumpage and I
6 was referring to the paper I did in the Forestry
7 Chronicle, A Need for Extensive Management Forest and I
8 would have to check the exact numbers, but I used a
9 range of stumpage and an approximate figure for what it
10 is now and an increased value, and then I increased the
11 value by, I believe, one cent or one per cent per year,
12 so it was a changing type of stumpage, but I used both
13 a low and a high type of stumpage.

14 Q. When you use the word stumpage, you
15 are talking about the stumpage charged by the
16 government directly to the operators for cutting
17 timber?

18 A. The direct return, right.

19 Q. All right. On Page 77 of your
20 witness statement, can you turn to that, please. Do
21 you have that?

22 A. I do.

23 Q. You indicate in the second sentence:
24 "Conventional economic analysis of the
25 worth of doing intensive silvicultural

1 projects indicate that intensive
2 silviculture operations in Ontario
3 cannot be carried out at a profit."

4 You were asked in an interrogatory by the
5 Ministry of Natural Resources to as to whether
6 conventional economic analysis you meant net present
7 value?

8 Perhaps the easiest thing to do is just
9 hand out the interrogatory. It is very short, but can
10 we mark this as the next exhibit, Madam Chair. MNR
11 interrogatory No. 43 for this panel.

12 MADAM CHAIR: That will be Exhibit 1658.

13 ---EXHIBIT NO. 1658: MNR interrogatory No. 43 and
14 answer thereto. (Panel 5)

15 MR. FREIDIN: Q. In that response you
16 were asked:

17 "By conventional economic analysis does
18 the witness mean net present value?"

19 You said:

20 "Yes, sometimes referred to as net
21 present worth. A benefit cost ratio
22 could also be used."

23 Then in (b) you were asked:

24 "If you mean net present value, is it the
25 author's opinion that no other

1 socio-economic indicators be considered"?

2 You said:

3 "Yes, i.e., no other socio-economic
4 indicators neared to be considered."

5 Is there any element of the potential
6 effect on the social environment incorporated within
7 this conventional economic analysis?

8 A. No, not the way that I'm looking at
9 it. I'm looking at it from the long-term and if you
10 are looking at a particular situation in the short term
11 we might want to consider it, but I'm looking at the
12 long term management of an area.

13 Q. So to make sure I understand it then.
14 When you were talking about doing a net present value
15 calculation and it coming out negative and that having
16 an influence on whether you, in fact, harvested an area
17 or whether you could use artificial, you were talking
18 about doing on analysis which did not have as part of
19 the calculation a consideration of the effect of
20 operations on the social environment?

21 A. That's correct.

22 Q. Okay. You indicated in your
23 evidence, Mr. Benson -- you said:

24 "If you are managing the forest and have
25 different options you would set out the

1 net present worth. Dollar value is my
2 preference. Forests for Tomorrow have
3 considered others in their approach."

4 Now, could you, first of all, please
5 clarify the difference between your approach and
6 Forests for Tomorrow's approach on this issue?

7 A. I think it would be jumping ahead to
8 the --

9 MADAM CHAIR: What page are you on, Mr.
10 Freidin?

11 MR. FREIDIN: This is just from the
12 direct evidence.

13 MS. SWENARCHUK: Do you have a page
14 reference?

15 MR. FREIDIN: No.

16 Q. Mr. Benson, do you agree that I have
17 properly characterized your evidence that you would set
18 out the net present worth by dollar value? That's
19 true?

20 A. That's right.

21 Q. And it is your understanding that
22 Forests for Tomorrow have considered other values in
23 their approach?

24 A. Yes, and that's to be presented in
25 Panel 7 I believe it is.

1 Q. All right. Can you explain to me
2 your understanding of the difference between your
3 approach then and Forests for Tomorrow's approach which
4 you say is going to be presented in Panel 7?

5 A. Well, I have tried to evaluate it in
6 the reference I gave, A Need for Extensive Management.
7 I evaluated it from the point of view of producing
8 timber and I have tried to take a look at the other
9 uses, but I haven't looked at it from the point of view
10 of putting a dollar value on them, and I did that in
11 the other paper that I wrote for the Forestry
12 Chronicle.

13 Q. Okay. And in Forests for Tomorrow's
14 approach, what's your understanding of how it differs
15 from what you did?

16 A. From what I understand, is that they
17 would be considering some of the non-market values, and
18 that can include the fish and wildlife values, the
19 aesthetic values, tourism values.

20 Now, some of these I think you can in the
21 end put a dollar value on them and I think I went
22 through that the other day, whether it be an assigned
23 value or -- there are different ways you can measure
24 those particular values, but I didn't go into that
25 depth when I looked at it.

1 Q. Okay. You indicated that when you
2 have looked at other uses but you didn't put a dollar
3 value on that. When you looked at those other uses,
4 did it have any influence in terms of your calculation
5 of net present value?

6 A. No. There's two separate papers that
7 I wrote. One I did looking at the dollar value and the
8 second one looking at the effect on other uses and what
9 would happen to those other uses if you used extensive
10 management, and I didn't put a dollar value on them.

11 Instead of quantifying them, I just used
12 a qualitative assessment of, would that value increase
13 or decrease and tried to assess the effect that way.

14 Q. Now, we have spent some time with Mr.
15 Marek and I think we have also spent some time with you
16 in relation to Forests for Tomorrow's terms and
17 conditions 14(1)(viii) which refers to where one should
18 be required to use extensive and where one can use
19 intensive.

20 Term and condition 14(1)(viii).

21 MR. MARTEL: What's the number of the
22 exhibit?

23 MR. FREIDIN: The exhibit is exhibit...

24 MS. SWENARCHUK: 1610 is the full set.

25 MR. FREIDIN: Page 15. Do you have that,

1 Madam Chair?

2 MADAM CHAIR: Yes, we do.

3 MR. FREIDIN: Okay.

4 Q. It is in that particular term and
5 condition where we have reference to present net worth
6 of all direct costs and returns is positive.

7 MADAM CHAIR: Excuse me, Mr. Freidin, you
8 are not on the January 30th version?

9 MR. FREIDIN: I am on the...

10 MADAM CHAIR: It is just the page
11 numbering is wrong according to ours.

12 MR. FREIDIN: I must say I have marked up
13 the original drafts and I keep using that by
14 cross-referenceing. I know that's the right section.

15 MADAM CHAIR: 14(a)?

16 MR. FREIDIN: 14(1).

17 MADAM CHAIR: There is no sub 1.

18 MR. FREIDIN: Go over to page 14. It
19 says 14, subparagraph 1 and then it has got (viii):

20 "Require the use of extensive
21 silviculture on all sites."

22 MADAM CHAIR: We had it last week.

23 MR. FREIDIN: (indicating)

24 ---Discussion off the record

25 MS. SWENARCHUK: Are you sure we need to

1 go through this again, Mr. Freidin?

2 MR. FREIDIN: Absolutely sure.

3 MADAM CHAIR: Let's find out where we are
4 going with this, Mr. Freidin.

5 MR. FREIDIN: I think my questionS will
6 make it very clear, Madam Chair.

7 MADAM CHAIR: Okay. What's the question?

8 MR. FREIDIN: Q. You have used the
9 phrase:

10 "Present net worth of all direct costs
11 and returns is positive."

12 You have indicated that you have one way
13 that you dealt with present net worth -- or present net
14 value in one way and Forests for Tomorrow have used a
15 different approach.

16 You said that you had a hand to play in
17 drafting these terms and conditions I want to know when
18 the phrase "present net worth of all direct costs and
19 returns is positive", when that phrase appears in the
20 terms and conditions, are we to interpret that that
21 means we should do it the way you do it or should we do
22 it the way you say Forests for Tomorrow are going to
23 explain it differently in Panel No. 7?

24 MS. SWENARCHUK: That's a question that
25 we could answer, that you could ask us.

1 MR. FREIDIN: All right.

2 MS. SWENARCHUK: Clearly the terms and
3 conditions are Forest for Tomorrow's terms and
4 conditions and the totality of the evidence on our
5 meaning the intent to convey by those words will be
6 explained through all of our witnesses who will testify
7 to them, primarily the witnesses in Panel 7 and there
8 is the answer.

9 They are not -- Mr. Benson hasn't come
10 here and filed his own individual terms and conditions.
11 They are Forests for Tomorrow's terms and conditions.

12 MR. FREIDIN: Q. Can I take it, then,
13 that the present net worth of all direct costs and
14 returns is positive, when the term and condition says
15 that that calculation should be done and used as the
16 benchmark against whether one should use intensive --
17 or can use intensive as opposed to natural, that it's
18 not done by doing a net present value calculation the
19 way you have described the way you did it and would
20 like to do it, but rather it's one which takes into
21 account non-timber values as well?

22 A. I think you would like to try to
23 consider as many non-timber values as well, yes, if you
24 can.

25 Part of the problem, as we discussed

1 before, was putting a value on some of those non-timber
2 values. It may be difficult to do that initially, but
3 you should be able to show whether you are going to
4 have a positive or negative effect on a value. Whether
5 you can put a dollar value on it is more difficult. I
6 would prefer if you could, then it would make it
7 easier.

8 Q. You indicated in Volume 274, page
9 49,406 - I don't think you have to refer to this, Mr.
10 Benson - that in your view the terms net present value,
11 net present worth and net present benefit all -- you
12 mean the same thing, they were synonymous.

13 A. From the text I have read they seem
14 to be used interchangeably. The trend seems to be to
15 use net present worth in integrated resource management
16 when you are taking a look at the whole scope of
17 resources that you're managing.

18 Q. Are you familiar with the term net
19 social benefit?

20 A. I know the term, but I haven't really
21 used it.

22 Q. Can you advise whether in your
23 opinion net social benefit is synonymous with the three
24 terms I have mentioned or whether it is different?

25 A. I couldn't advise you on that.

1 Q. Because you are not aware of the
2 exact definition of net social benefit?

3 A. Correct.

4 Q. When one is to do the net present
5 worth calculation referred to in Forests for Tomorrow's
6 term and condition 14(1)(viii), is that a calculation
7 which is to be done at the stand level, the forest
8 management unit level or some other level?

9 A. I think it is a calculation you can
10 do both at the stand level and I think it's a
11 calculation that you can do at the management unit
12 level.

13 Stand level if you are trying to
14 determine or compare silvicultural projects or ways to
15 treat a particular area, but I think you also need to
16 make the calculation for the management unit to
17 determine the effect, overall effect of the management
18 scheme for that management unit.

19 Q. Do I interpret your answer correctly
20 this way: When you are trying to make the a
21 determination as to whether you should use artificial
22 or natural, that you make the assessment at the forest
23 management unit level and once you have made that
24 decision, once you get down to the stand level, you can
25 use a net present value approach to determine which

1 silvicultural treatment, in fact, would be the cheapest
2 way to achieve whatever you have chosen, either natural
3 or artificial?

4 A. In a way. When you are managing a
5 unit, you can't manage a stand in isolation. In order
6 to get the diversity of the stands, et cetera, that you
7 want in the particular area they have to fit into a
8 particular management scheme.

9 So the overall scheme would affect the
10 way that you are managing a particular stand. Then the
11 particular way you want to manage a stand would already
12 be somewhat predetermined by the overall scheme for the
13 whole management unit.

14 Q. Can I take it then that the
15 determination -- if the question is: Will I use
16 artificial or will I use natural, is a decision which
17 gets made at the forest management unit level when you
18 are doing this net present worth calculation?

19 A. With the exception if you were going
20 to pick out areas where you wanted to have the more
21 productive areas, where you wanted to practice the
22 intensive management.

23 Q. And why would that be an exception?

24 A. Well, of in a management unit you had
25 areas that you felt you could practice intensive forest

1 management, then those should be selected and noted and
2 in that case your management could be for more
3 intensive management.

4 Q. Right.

5 A. But on the rest it would be the
6 extensive management option.

7 MR. FREIDIN: Excuse me, Madam Chair.

8 Q. Can you answer the question in
9 relation to the term and condition we are talking
10 about, 14(1)(viii), whether the calculation that is
11 referred to and contemplated is to be done at the stand
12 level or forest management unit?

13 You said it can be done at either.
14 What's the intention of this term and condition? It
15 says -- I can tell you it says:

16 "Intensive silvicultural may be used on
17 sites...." et cetera. That's the part I
18 am concerned about.

19 A. Where would you make the separation
20 between extensive/intensive? What piece of land is
21 going to be managed extensively, what piece is going to
22 be managedd intensively?

23 Q. Yes.

24 A. I think, again, you have to take a
25 look at the whole management unit and what's your

1 overall purpose for managing that management unit, and
2 then you could identify particular sites within that
3 management unit where you could say: Yes, intensive
4 management can fit into our overall management of the
5 area, and if we do our calculation for present net
6 worth it turns out positive, so it's economically
7 viable to do intensive management.

8 Q. But when you did that calculation to
9 find out whether calculation came out positive or
10 negative, you are doing this now at the forest
11 management unit level, would you be looking at an
12 analysis which would in fact take into account a mix of
13 intensive and a mix of natural and say: Okay, if I
14 look at using both will I come out with a positive net
15 present value or not?

16 Is that what you would be doing at the
17 forest management unit level?

18 A. I didn't get the intent of your
19 question. Could you repeat that, please.

20 Q. When you are doing this analysis at
21 the forest management unit level, you said the outcome
22 may be a decision that we are going to use intensive
23 here and some -- use intensive and extensive.

24 When you are doing the calculation to
25 determine whether, in fact, you are going to be able to

1 have a mix, am I correct that what you do is you look
2 at the effect of the whole management unit of using
3 intensive in some areas and extensive in other areas
4 and you then do your calculation based on using a mix,
5 and if the calculation is made, thinking you are going
6 to have a mix, turns out to be a positive, then you
7 have a positive net present worth?

8 A. I think you can make a calculation
9 like that for the whole management unit, plus a
10 calculation for the individual stand area.

11 MADAM CHAIR: Excuse me, Mr. Benson. The
12 Board is getting confused on this point. Can we
13 start --

14 THE WITNESS: I think I am, too.

15 MADAM CHAIR: Can we start back a few
16 steps. What you are talking about is putting -- what's
17 the forest worth, your first question is that, is it
18 worth being used as timber or is it worth being used as
19 something else.

20 Then putting aside the non-timber
21 resources, you are concentrating on what the forest is
22 worth as timber and you are saying that you will put a
23 value on that because as far as you are concerned the
24 value of the tree for timber is its stumpage?

25 THE WITNESS: Correct.

1 MADAM CHAIR: No other value, just what
2 we get back in stumpage, what the government is paid
3 for the stumpage fees.

4 So when you are looking at a stand of
5 trees and trying to make a decision about whether to do
6 artificial or natural regeneration, just a simple
7 decision with one stand of trees, you do your
8 calculation and see how much stumpage you would get
9 back from that stand.

10 Well, you do it before you cut the stand,
11 I suppose. Now, if you do that, are there -- it
12 doesn't seem to be Board that there are very many
13 circumstances where the stumpage is going to give you a
14 net present value.

15 THE WITNESS: A positive net present
16 value.

17 MADAM CHAIR: Ever for timber. And then
18 we will ask questions after that, but just starting
19 with that basic idea.

20 In what situation do you ever get a
21 positive net present value for cutting down trees,
22 using it as timber only and planting it? When is that
23 ever going to happen?

24 THE WITNESS: It would only happen if you
25 have an area that's very productive and you use the

1 cheapest possible ways for artificially regenerating it
2 and, secondly, it depends upon the stumpage that you
3 are going to get for those trees.

4 MADAM CHAIR: But assuming that the
5 stumpage -- let's just assume that it is what it is
6 right now, it is so low that you are never going to get
7 a positive net value.

8 THE WITNESS: For most areas in Ontario
9 that's probably true. There might be some exceptions
10 here and there. Perhaps --

11 MADAM CHAIR: But other than a few
12 pockets of very --

13 THE WITNESS: There wouldn't be very
14 much, no.

15 MADAM CHAIR: There wouldn't be very
16 much.

17 All right. So then the Ministry will be
18 in the position of always doing natural regeneration
19 because it could never invest in artificial
20 regeneration techniques, it could never justify that?

21 THE WITNESS: Yes. There is a little bit
22 of confusion re extensive/intensive. It has been
23 defined differently I think by different people and
24 extensive is the basis of the lowest operating and
25 investment cost per hectare.

1 MADAM CHAIR: Which is natural
2 regeneration.

3 THE WITNESS: Which is natural
4 regeneration. But it is possible that if you had areas
5 that didn't come back artificially, then you would try
6 to pick the artificial method that was the cheapest
7 possible.

8 MR. FREIDIN: Q. If they didn't come
9 back naturally?

10 A. If they didn't come back naturally,
11 sorry. It is not really a black and white situation.
12 I think there is a spectrum of costs that you could
13 have associated with trying to regenerate an area.

14 The cheapest, certainly, would be the
15 natural, but you might have some type of treatment just
16 above that to try to bring it back. For example, it
17 might require some type of scarification or treatment
18 on the area to enhance the natural regeneration that
19 you get back. So it wouldn't entirely be purely
20 natural. There would be some type of treatment also.

21 MADAM CHAIR: It is going to take us 10
22 or 20 years to find that out, until we get free to grow
23 on the next stands that we cut down.

24 THE WITNESS: It is going to take time
25 for either method I think, and that's one of the

1 problems of trying to analyse the intensive forestry
2 part; what are we going to get, what crop do we expect
3 to get off area that area in the future for that
4 particular investment and how much do we have to invest
5 in that. Do we have to make further investment in that
6 intensively managed area to make sure we get the crop
7 that we want of it. There's problems in both those
8 areas.

9 I think, though, that many of the answers
10 are out there already because we have harvested areas
11 over a long period of time and treated them in
12 different ways, both artificially and naturally. Some
13 of the answers I think just are waiting there to be
14 collected and put together for the particular
15 management units.

16 Without published research type of
17 documentation, I think you can get some practical
18 answers from management units from the people working
19 on the area that they can put together: Well, this is
20 the best way for getting natural regeneration on this
21 area.

22 MADAM CHAIR: Okay.

23 MR. MARTEL: Is it your experience that
24 what we have done over the past, and you have just
25 indicated we have cut most or much of it and we are

1 into a second forest, is there a pattern out there of
2 investing heavily in some form -- as though some plan
3 were there to try to maximize the investment in terms
4 of nearness to mills and so on or has it just been
5 haphazard investment in terms of intensive management
6 for the past 20 or 30 years, or is there some plan?

7 The reason I ask that is, it doesn't
8 appear as though there has been any coordination. So I
9 simply don't know.

10 THE WITNESS: The idea of identifying
11 land use and the most productive forest land has been
12 around for a fair time and it keeps popping up that
13 this is where we should be practising our intensive
14 forestry.

15 In most cases I can't see where that has
16 really been done or achieved at this particular time.
17 The attempt has been made in the northeastern region to
18 identify the more productive sites and to try to put
19 their investment on those particular areas.

20 Some of the other regions are trying to
21 use the FEC classifications and relate those to
22 productivity, but that's still a tenuous relationship
23 and then that would be used for identifying the areas
24 for intensive management, but for all intents and
25 purposes it hasn't been done at this time except for

1 the northeastern region where I believe they have a
2 better handle on it.

3 MADAM CHAIR: Okay, Mr. Benson. So we
4 understand from your evidence that we would look at a
5 stand and we would do a net present value calculation
6 to see whether it warranted artificial or natural
7 regeneration, but when do we make the decision about
8 whether we will devote that stand to timber production
9 or non-timber uses?

10 You would want to make that determination
11 before you decided how you wanted to regenerate it;
12 wouldn't you?

13 THE WITNESS: Yes. If you are going to
14 separate land use, yes, you would want to make that
15 determination before you do that type of calculation.

16 MADAM CHAIR: So, again, looking at the
17 same stand before we cut it down, we decide if we are
18 going to bring it back for -- well, if we are going to
19 use it for timber or not. So the decision at that
20 point is whether to harvest it or not?

21 If you harvest it, you decide it is more
22 valuable as timber; if you don't harvest it, it is more
23 valuable as a non-timber resource.

24 THE WITNESS: Yes.

25 MADAM CHAIR: The only value you are

1 going to give the stand at that point with respect to
2 timber is also stumpage?

3 THE WITNESS: That's right.

4 MADAM CHAIR: This is a question we asked
5 Ms. Swenarchuk to put to her Panel 7 witnesses.

6 The Board needs to be convinced that
7 that's a realistic way to value timber when you are
8 only looking at a small per cent of what it is worth if
9 you look at the entire economy of the north, of the
10 provincial input.

11 THE WITNESS: It is the way I prefer to
12 look at it because it is a direct return for managing
13 <-GT> the land. If you are a private land owner you
14 would have to look at it that particular way.

15 MADAM CHAIR: But the government isn't a
16 private land owner.

17 THE WITNESS: No, but if you --

18 MADAM CHAIR: It is Crown land and there
19 are other benefits that come from that land whether
20 they are larger or smaller or whether it's worth
21 building roads and all that business. There are larger
22 benefits than how many millions of dollars that we get
23 for stumpage.

24 THE WITNESS: It really doesn't change
25 the ranking of the projects, the value of the stumpage

1 in most cases. If I, say, increase the stumpage a
2 hundredfold and did the analysis, you would still come
3 out with the extensive ahead in most cases because of
4 the productivity of the land. The land is low
5 productivity, so you can't get a high rate of return on
6 it. If you have got more productive land, you can get
7 a higher rate of return on it.

8 So even with an extensive option you can
9 come up with a negative value. With the intensive
10 management option it would be more negative. If you
11 increase the stumpage you might get the extensive
12 positive, the intensive negative. Increase it more and
13 you might get positive, but the extensive would still
14 be more positive than the intensive.

15 MADAM CHAIR: So from a timber point of
16 view when the decision is only whether to harvest and
17 how to regenerate, in your view the decision will
18 almost always be one of extensive management and some
19 combination of natural regeneration?

20 THE WITNESS: That's related primarily at
21 the present time to the productivity of the land. It's
22 land of low productivity.

23 MADAM CHAIR: We can understand that.

24 Now, the first step of determining
25 whether or not that will be an area used for its timber

1 resource, do you believe, again, that if you use
2 stumpage the decision will always be in favour of
3 non-timber resources?

4 THE WITNESS: That the non-timber
5 resources would outweigh the timber values?

6 In Ontario, for most of the land, no, I
7 don't think they would outweigh it. In the States they
8 do outweigh them by the way that they have given
9 non-timber values certain dollar values. In Ontario, I
10 don't think they would outweigh the timber values for
11 much of the area, no.

12 MADAM CHAIR: Even if stumpage were the
13 only factor, economic factor in the analysis?

14 THE WITNESS: Even if stumpage were the
15 only economic factor, right.

16 The thing I was trying to point out is
17 that extensive management can enhance those other
18 values more so than what intensive management can.

19 MADAM CHAIR: Well, that's true, but I am
20 talking about the decision to harvest that stand in the
21 first place. If you harvest the stand, then you are
22 not permitting a non-timber use of that stand.

23 THE WITNESS: In that case, for most of
24 Ontario the timber value would be higher. The
25 exceptions would be where you are setting aside certain

1 areas for wilderness where it's difficult to define
2 that particular value, again. It can be done, but it's
3 difficult to relate to the timber value.

4 MR. MARTEL: Can you divorce all the
5 other factors, though, when you are considering the net
6 present worth? By those factors, I mean the life of a
7 community, the number of hunter days in an area, what
8 it does for tourism.

9 I mean, when one looks at the meager
10 population of northern Ontario, it is difficult to get
11 the net present worth up for a lot of those other
12 factors, but should one not look at an overall
13 consideration of all the various factors in coming to
14 that worth?

15 THE WITNESS: Well, my reasoning along
16 that line is I was looking at the forest in the long
17 term for a rotation.

18 So if you are providing the net present
19 worth for the timber and increasing the net present
20 worth for the other resources that are based upon the
21 timber, the wildlife, the aesthetics of the area, if
22 you are increasing those two, then overall you are
23 doing some benefit.

24 I wasn't really measuring it in terms of
25 the social context in that way. I was looking at it

1 from the point of view of managing a forest for
2 providing for the whole variety of benefits from that
3 forest.

4 The basis for that saying is that is that
5 many of these resources depend upon having the forest
6 there. So that if you try to develop this forest over
7 time that's providing these other features, I would
8 assume that it is going to provide the social benefits,
9 but I didn't really measure them.

10 Quite often I associated the social
11 benefits whereby you might want to in a certain area --
12 where you have a particular problem with employment in
13 a certain area and you might want to help out in that
14 respect in the short term, but I can't see that you can
15 do that in the long term. I can see where you can
16 provide incentives in the short term, but not for the
17 long term. You would want to base the long term on
18 what the forest can actually produce.

19 MADAM CHAIR: What you are saying, in
20 effect, Mr. Benson, is that there really isn't a way
21 that you can take bits and pieces of your
22 recommendations on how to manage the forest by
23 themselves; in other words, your idea of how to value
24 timber versus non-timber resources can only be done
25 from your viewpoint if we do small clearcuts, if we

1 emphasize natural regeneration?

2 All your ideas are very much associated
3 with one another; in other words, it would be badly
4 distorted to take something like net present value and
5 put it on a system the way it operates today in
6 Ontario?

7 THE WITNESS: Well, you could put it on
8 the system today in Ontario. In some respects I think
9 it should be on to get on idea of what's really
10 happening in the forest.

11 What it forces you to do is try to pull
12 together what value are we producing from the forest in
13 the long term and try to figure out the most economical
14 way to produce those for the forest.

15 MR. MARTEL: But that would mean then
16 moving to smaller cuts if you are going -- maybe I am
17 not seeing it properly, but if you are going to use net
18 present worth and you are going to have extensive
19 management, then it is going to rely more on natural
20 regeneration than it does on artificial regeneration.

21 The only way that that's going to occur
22 is if you in fact can succeed with natural
23 regeneration, and the only way that's going to succeed
24 is if you move away from massive clearcuts or
25 contiguous clearcuts that don't give you the type of

1 forest pattern you want for wildlife?

2 THE WITNESS: Yes, you have to consider
3 the whole package.

4 MR. MARTEL: You have to look at the
5 whole package?

6 THE WITNESS: Right.

7 MADAM CHAIR: Mr. Freidin?

8 MR. FREIDIN: Q. Mr. Benson, were the
9 Forests for Tomorrow's silvicultural prescriptions set
10 up to in fact get natural regeneration on the
11 assumption that if you strayed from natural
12 regeneration the net present value would be lower?

13 A. I'm sorry, that if you strayed
14 from...

15 Q. Were Forests for Tomorrow's
16 silvicultural prescriptions fact designed or set up to
17 stress natural regeneration because there was an
18 assumption being made that if you didn't use natural
19 regeneration your net present value would be lower?

20 A. In most cases for most of the forests
21 of Ontario that way, but the provision --

22 Q. Is it one of the assumptions upon
23 which led to the design of the silvicultural
24 prescriptions, to emphasize natural?

25 A. That was one of my assumptions. I am

1 not too sure how much it enters into the philosophy
2 behind the whole package of Forests for Tomorrow.
3 Maybe I am misunderstanding you.

4 Q. Well, I am interested in that because
5 you said that you supported the terms and conditions,
6 that you had a hand in writing them.

7 I am interested in -- now are you saying
8 that notwithstanding you had some input into these
9 terms and conditions, you can't confirm that that is
10 the philosophy behind the terms and conditions?

11 A. Well, certainly part of it is that if
12 you are going for extensive management, just by the
13 definition that you are -- you should have a higher net
14 present value unless you have some very productive
15 land, but the overall idea, too, was that by going for
16 extensive management and by eliminating or having
17 restrictions on the size of the cut areas you'd try to
18 provide for some of the other uses of the forest and to
19 provide the diversity that would be more beneficial to
20 wildlife, et cetera.

21 MADAM CHAIR: See, Mr. Benson - excuse
22 me, Mr. Freidin - what you just said confuses me again
23 because I had thought that your evidence was that --
24 what you just said makes me think that what you mean is
25 that we continue to have timber operations and carry on

1 and we make that compatible in the aftermath with
2 non-timber values, whereas I thought the whole point of
3 net present value was you made a decision upfront about
4 planning for non-timber values and then deciding you
5 wouldn't do timber operations.

6 THE WITNESS: No.

7 MADAM CHAIR: You are saying in those
8 situations --

9 THE WITNESS: No, I'm sorry, I wasn't
10 using it as a separation between timber and non-timber
11 values. No, I wasn't using it that way.

12 I was using it as a point for showing how
13 to operate it for timber plus the associated values
14 with that timber operation, not for separating
15 non-timber or timber use of an area. I didn't mean it
16 that way.

17 I think the separation between timber and
18 non-timber is more difficult. Certainly if you want
19 wilderness areas, it is hard to put an economic value
20 on that unless you say it is the value of the timber
21 for volume because of making it a wilderness area,
22 that's the value of the wilderness area. Those types
23 of separations, I wasn't using the net present value
24 for that.

25 MADAM CHAIR: So the way you are using

1 present value is to assume that timber operations,
2 timber areas will be compatible with non-timber
3 resources? It isn't one or the other?

4 THE WITNESS: That's right. In fact,
5 certainly the way timber operations are going at the
6 present time -- say, if you have large clearcut areas,
7 they have an impact on the area, and what we are saying
8 is that using the extensive management and limiting the
9 size of the clearcut you can have more of a beneficial
10 impact on the area.

11 Now, the work I have done to date is
12 measuring the net present value based on the timber per
13 se and I did a qualitative type of paper on the other
14 values, extensive versus intensive, and Panel 7 will be
15 dealing more with the variation between the two.

16 But both have an affect on -- wherever
17 you are harvesting timber, both have an effect on the
18 area. From the timber point of view, the extensive is
19 better net present value, but I also believe it has
20 more of a value for the other uses of the area, too.
21 So that if you can put a dollar value on them it would
22 increase your net present value over intensive.

23 MADAM CHAIR: Mr. Freidin.

24 MR. FREIDIN: Q. Mr. Benson, a
25 hypothetical. Let us assume for the moment that the

1 Board in the end does not accept the use of net present
2 value or net present worth as a reasonable benchmark
3 upon which to make silvicultural decisions, do you
4 agree in that situation, where the assumption upon
5 which you based your terms and conditions is not
6 accepted, that the term and condition itself cannot be
7 justified on the basis of a net present value argument?

8 A. Which particular term and condition?

9 Q. The term and condition that we have
10 been talking about.

11 A. Which is subsection 8?

12 Q. 14(1)(viii) and any other one which
13 talks about having to do a net present value
14 calculation in relation to this decision as to what
15 kind of silviculture you are going to carry out.

16 What I am saying is, just hypothetically,
17 if the Board says: Look, we have heard you, Mr.
18 Benson, we have heard Panel 7, we just don't accept
19 that net present value is the proper benchmark to
20 determine what you going to do silviculturally, would
21 you agree with what I would think would be the obvious
22 result in that circumstance; that is, the term and
23 condition, any terms and conditions which are based on
24 that net present value calculation should not be
25 accepted by the Board because the very premise on which

1 they were put forward has not been accepted?

2 Hypothetical.

3 A. I think if what you are interested in
4 is the way that the area is being treated overall and
5 regardless of how you measure that, whether you use
6 present net worth or whatever, you would want to make a
7 decision as to what particular way of managing that
8 area is going to be less harmful to the environment and
9 more beneficial to the other uses.

10 So whether you use net present value or
11 net present worth to measure that I don't think really
12 has a bearing on it.

13 The point we are trying to make there,
14 too, is that the extensive management or the smaller
15 cuts associated with extensive management can be more
16 beneficial to the other uses and cause less adverse
17 environmental effects to the area.

18 MR. MARTEL: Can I ask a question, Mr.
19 Freidin?

20 MR. FREIDIN: Yes, Mr. Martel.

21 MR. MARTEL: I want to get to the heart
22 of this.

23 Let us say the Board ruled that there
24 would be no cutting more than 100 hectares period, that
25 is what the term and condition is up above, one of

1 them, with that in mind, would we have to rely on that
2 section which says you can only -- let us say it is a
3 hundred hectares and it is jack pine which requires
4 seeding primary, are you saying unless there was a net
5 present -- a positive net present worth that you
6 couldn't artificially regenerate that jack pine area
7 that needs seeding?

8 THE WITNESS: I don't think that's the
9 intent of it, to not regenerate an area, and I think it
10 is a problem of wording, et cetera.

11 The overall philosophy behind this is to
12 try to limit the size of the cuts and to try to put
13 some measure on that and I think an economic measure of
14 treating these low productive areas as economically as
15 possible is viable, and if you can work in what the
16 other values are for the area, work those in too into
17 the management system being used.

18 MS. SWENARCHUK: Can I just add to this
19 for Forests for Tomorrow, Mr. Martel.

20 Again, the wording of the disputed
21 section talks about using extensive silviculture on all
22 sites and stands capable of natural regeneration. If
23 the assessment is that the site is not capable of
24 natural regeneration, then the option is there to use
25 artificial ones.

1 We are not suggesting that it is not
2 possible to use artificial regeneration if that is
3 what's essential for regenerating the site. Mr. Marek
4 has said that and I think Mr. Benson has said that.

5 MADAM CHAIR: We still have some
6 confusion, Ms. Swenarchuk, because we have evidence
7 before us that the forester has to make that decision,
8 but the forester should try natural regeneration before
9 he or she does artificial regeneration.

10 So whether the site is capable of it or
11 not, we don't know that until you try natural
12 regeneration and presumably that would be the
13 instruction that would go out to MNR.

14 Now, we could take a bit of time on that
15 with Mr. Benson, but the Board is getting pretty sick
16 of going over word for word in these terms and
17 conditions.

18 But essentially, Mr. Benson, is your view
19 -- let's not look at the wording of all. Is your view
20 that you would insist that an MNR forester, if this
21 application were approved on the overall
22 recommendations of what Forests for Tomorrow is saying,
23 would you insist that a forester try natural
24 regeneration on every site that was harvested as a
25 first step and then wait to see what happens to it?

1 THE WITNESS: I think that in most of the
2 sites they could try to achieve natural regeneration.

3 Now, on some areas they may not be able
4 to and they would have to use some form of artificial
5 artificial, in which case it should be the cheapest
6 possible to regenerate that area.

7 MADAM CHAIR: Given that broad statement,
8 would you trust individual MNR foresters to make those
9 judgments responsibly and not say: Oh, well, it is
10 just easier to regenerate artificially and I won't
11 bother exploring the natural stuff?

12 I mean, how do you word a condition? We
13 have gone over and over on this and, as I say, the
14 Board is just sick to death of going over this stuff,
15 but how would we word a condition if we were to accept
16 the condition that you have to try natural regeneration
17 except you can use your own professional judgment and
18 experience to say that you don't have to?

19 THE WITNESS: I would need some time to
20 think on that. I can't define how you would do that to
21 answer that particular problem.

22 The other part there with the forester,
23 could you just say to do it that way -- could you trust
24 them to do it that way. It's not just a matter of
25 trust, I don't think. I think it is a matter of

1 philosophy of the organization and how you plan to
2 manage overall for the forest and it has to be
3 integrated with the harvesting of the area. How can
4 they economically harvest the area, what are the
5 restrictions in that way.

6 I guess there is a philosophical point
7 there of how are you going to regenerate these
8 particular areas in Ontario that have been regenerated
9 by the government at government expense.

10 In other provinces they have gone to a
11 system where they've put more reliance on the
12 companies. So that in that way they've really forced
13 the companies to find the cheapest way to regenerate
14 the area. If they have to pay for it, they have to
15 find the cheapest way to regenerate that area.

16 MADAM CHAIR: Are you advocating in
17 Ontario that we change our policy to require the
18 companies to regenerate areas themselves?

19 THE WITNESS: I think that's a better
20 way. Alberta, I believe, is a leader in this area of
21 looking at managing the forest. They certainly were
22 ahead with forest management agreements and they seem
23 to be ahead with how to manage the forests concerning
24 other environmental factors.

25 They haven't really provided all the

1 answers, but I think they are somewhat further ahead
2 that way than what we are.

3 MADAM CHAIR: That's not Forests for
4 Tomorrow's position before the Board? The position
5 before the Board is what we see in front of us, not
6 that?

7 THE WITNESS: Right.

8 MR. MARTEL: Are you saying, Mr. Marek -
9 it reminds of me of Mr. Marek, that's why I started
10 that way - Mr. Benson, that there are people trying to
11 bring in terms and conditions which take - maybe I am
12 misreading it - more sophistication than we have
13 applied in the past?

14 There seems to be an argument that the
15 old method was cut and scarify and seed and then run in
16 and throw some fertilizer on it -- not fertilizer, but
17 some form of pesticides to knock it back or herbicide
18 or whatever you want to call it, and then let it start
19 again as opposed to becoming more careful as to how
20 things are done?

21 We seem to be caught, at least this is
22 what the argument appears from where I sit anyway, that
23 one takes this position, another one is taking the
24 other position, but somewhere in the middle maybe is
25 the right answer but there doesn't to be -- outside of

1 maybe -- I think my colleague recognized it last week
2 when she said it seemed that you are quite sensitive to
3 some of these things and that's why I followed up with
4 a question.

5 Well, is it the second you deviate, then
6 somebody goes for the jugular and tries to make it more
7 of hard and fast; it has either got to be totally this
8 or nothing.

9 We seem to be caught in those two
10 positions and any endeavor to soften the edges, all it
11 seems to lead for is more opening to get it more
12 restrictive one way or the other and it doesn't seem to
13 be -- there is mistrust from the past, there is
14 failures from the past, successes, but we seem to be
15 caught in there and that's where the questioning heads
16 all the time, can we get them deviate one iota from
17 something, and is that what is best for the forest, I
18 guess is what I am leading to.

19 Are we really so tight and so precise,
20 are we doing what is best for the environment or the
21 forest or is there there somewhere in there because I
22 don't think you will every write everything down
23 precisely that you have do. I don't think it's
24 possible.

25 MADAM CHAIR: Ms. Swenarchuk?

1 MS. SWENARCHUK: Is it of any benefit for
2 me to inform the Board of the process that FFT went
3 through in grappling with this question? Is it of any
4 benefit if I tell you that right now?

5 MADAM CHAIR: Well, with respect to what?
6 How the words got to be this way?

7 MS. SWENARCHUK: And this question of a
8 definition and long-term directions.

9 MADAM CHAIR: Mr. Freidin, do you have an
10 objection?

11 MR. FREIDIN: It's hard --

12 MS. SWENARCHUK: I really think it is more
13 useful will to discuss it right now than a year from
14 now when we are doing final argument, although I
15 suppose if we are still here we will be doing it then,
16 too.

17 MADAM CHAIR: Go ahead, Ms. Swenarchuk,
18 unless you have an objection, Mr. Freidin?

19 MR. FREIDIN: Well, I don't know what she
20 is going to say, so...

21 MS. SWENARCHUK: In brief, I think Mr.
22 Martel's question last week about concern about general
23 directions is at the nub of it.

24 We grappled for a long time with the
25 question of the wording, the appropriate wording for

1 terms and conditions that would include the appropriate
2 level of individual forester flexibility and decision
3 making and I think, in fact, Mr. Benson has already
4 given you though our final thoughts on it which is
5 that - and I think both Mr. Benson and Mr. Marek have
6 said - this is the general direction that our advisors
7 have told FFT and, therefore, FFT is saying to you,
8 this is the general direction that we advocate for the
9 future, that these prescriptions are to be treated as
10 guidelines, but the general direction of them, which is
11 moving from large area clearcutting to smaller area
12 cuts and a greater purposeful enhancement of natural
13 regeneration through the harvest process, is the
14 general direction which Forests for Tomorrow advocates.

15 And Forests for Tomorrow will be saying
16 to you at the end, as I think Mr. Marek and Mr. Benson
17 have said, that we see two general large area - let's
18 not use that - large issues which provide the rationale
19 for this direction.

20 The first issue is the question of the
21 ecological benefits overall which our advisors have
22 testified to you would result from smaller cuts and
23 greater reliance on natural regeneration. That's a
24 whole area of rationale that is behind these
25 prescriptions.

1 The second area of rationale is the
2 question of cost, and the assessment of our advisors
3 that the combination of the cheapest method of harvest,
4 large area clearcutting, practised by private operators
5 and the reliance on the most expensive approach to
6 regeneration, an artificial one, at a public cost, is
7 to our advisors and to Forests for Tomorrow not an
8 acceptable way to be proceeding.

9 Those two approaches led our advisors in
10 various areas with a consistency that we did not know
11 was there before we discussed all these questions, our
12 advisors coming from different rationales and different
13 reasons arrived at this as the preferred approach.

14 The question then of what change this
15 would mean in harvesting methods had to be expressed to
16 you in some way and the prescriptions that, as you say,
17 have been so tiresomely analysed and reanalysed are the
18 best wording we could come up with at the time, and we
19 continue to grapple with the question that you put so
20 succinctly, Mr. Martel, and I think again Mr. Benson's
21 words a few moments ago that what we are talking about
22 here is a change in overall philosophy of the
23 regulating government body, a change that would then
24 have to be translated into changes in industry
25 practice.

1 If that kind of change happened as a
2 result of a Board decision, I think we are confident
3 then that it would be played out in the field, perhaps
4 with variances from these specific words for sure, that
5 an overall orientation to changing methods of harvest
6 and changing approaches to regeneration would result.
7 There would be a combination of natural and artificial
8 used, but that is really our concern, is to have that
9 change in policy mandated at the highest levels.

10 MADAM CHAIR: Thank you, Ms. Swenarchuk.
11 That's helpful to the Board. It doesn't solve our
12 immediate problem of the wording business.

13 Everyone has good intentions, but three
14 years of this hearing have proven to us that where
15 people can quibble and quarrel over words they will do
16 so.

17 MS. SWENARCHUK: I agree.

18 MADAM CHAIR: The Board doesn't think it
19 is very useful to sit here for a few days and listen to
20 Mr. Freidin put questions to Mr. Benson about the exact
21 wording of these terms and conditions.

22 The Board wants -- as you know, we are
23 trying to wrap up this negotiation business in some
24 useful way and we want this issue put into that domain
25 now, talk about the wording of this condition.

1 We will have to revisit it if you can't
2 work out acceptable wording between you, then you will
3 to bring it back to the Board, but we are not going to
4 sit here and go through each witness asking them
5 whether they agree or disagree or would change the
6 wording of a particular term and condition.

7 MS. SWENARCHUK: As I have said
8 repeatedly before, Madam Chair, this whole question is
9 at the crux of the illustrative cost/benefit analysis
10 provided to you in Panel 7, and I hate to think of the
11 number of days that may be spent on the same wording.

12 MADAM CHAIR: Well, we want to use Mr.
13 Benson's time usefully and your time, Mr. Freidin. So
14 we are making that suggestion, that you go back and try
15 to do something about the wording and if you can't
16 agree, well, of course you will have to trust the Board
17 to do it itself.

18 MS. SWENARCHUK: We have of course have
19 had no indication that the Ministry in any way accepts
20 the approach that we are advocating, the matter of
21 exact wording. So that's the position that we are at.

22 MR. FREIDIN: I think this could be the
23 subject matter of our discussions, but I must be quite
24 frank, the Ministry has been grappling and I have been
25 grappling, particularly with the same confusion that we

1 had with Mr. Marek's evidence, about whether you have
2 to treat for artificial first or not.

3 Until I can understand what the
4 philosophy is behind what they are talking about, it is
5 very difficult to come up with the wording, but if I
6 can move on.

7 MADAM CHAIR: I think it is clear now,
8 Mr. Freidin, and so we will avoid anymore questions on
9 the wording of these terms and conditions and you will
10 either make useful time of negotiating this business or
11 the Board will do what it thinks is appropriate.

12 MADAM CHAIR: Ms. Seaborn?

13 MS. SEABORN: Thank you, Madam Chair. If
14 I could just make one comment in relation to this
15 discussion.

16 From MOE's perspective, you will recall
17 that since the outset of the hearing we have had some
18 concerns about normal operating areas, silvicultural
19 prescriptions. This is one issue that we put in our
20 outline to the Board of areas that we will address in
21 our case should we end up filing a witness statement
22 and we will have to see where we are after the
23 negotiation procedure in relation to that witness
24 statement, but it is an issue that MOE as well has been
25 grappling with in terms of how do we write this down so

1 everybody is clear on how we deal with silvicultural
2 prescriptions.

3 MADAM CHAIR: Mr. Freidin, do you want to
4 take the lunch break now or spend a couple of
5 minutes --

6 MR. FREIDIN: If I could spend a couple
7 of minutes on a few quick questions and answers.

8 THE WITNESS: Can I ask Mr. Martel first.
9 You brought up how to provide some direction and that's
10 a good question and a lot of foresters have been asking
11 that, too, because it is -- I find it an awkward forum
12 to try to deal with.

13 I can't answer your question, how you are
14 going to provide that direction other than I would hope
15 that you are seeing the range of opinions anyway and
16 can possibly try to narrow it down to find a more
17 equitable solution to managing the forests in Ontario,
18 but there are great expectations from several quarters.

19 MADAM CHAIR: The problem is, Mr. Benson,
20 we are not going to be around to manage the forests, as
21 you know. I think this hearing has probably put the
22 fear of the Lord in every forester who works in
23 Ontario, yourself included, and I would think that
24 whatever is put down on paper has to convey exactly
25 what we mean to convey and that there will be, I think,

1 quite a bit of scrutiny on how, if an application is
2 approved, it will ever be carried out.

3 MR. MARTEL: We have great faith that the
4 negotiating process will make some headway and maybe it
5 it is a different forum where you can get at many of
6 these things that are impossible with the present
7 situation.

8 MR. FREIDIN: I have two minutes to try
9 two questions.

10 Q. Mr. Marek -- Mr. Benson, sorry, if
11 one follows the approach that Mr. Marek indicated of
12 having to try natural regeneration first in
13 multi-purpose forests and you can only treat it
14 artificially if the natural regeneration has failed, in
15 that situation can you go ahead and do the artificial
16 regeneration without a net present value calculation?

17 A. Rather than just leave the area, I
18 suppose -- okay. What's going to happen to the area if
19 you don't artificially regenerate the area.

20 Q. Let's say the result is that you fail
21 to regenerate the cut-over naturally to an acceptable
22 standard, the standard being same species and density
23 as was there when you harvested it, which is what
24 Forests for Tomorrow want, and let's say it just fails,
25 it didn't work, can you go ahead and seed or plant to

1 achieve the objective without doing a net present value
2 calculation?

3 A. Well, I think for any silvicultural
4 operation you should do a net present value
5 calculation.

6 Q. All right. You do a net present
7 value calculation perhaps to determine which method of
8 artificial was the cheapest, okay, but can you go ahead
9 and do artificial as long as you pick the most
10 economical way of doing it?

11 A. Well, again, you see -- like, you are
12 going to get regeneration on an area and what you are
13 saying is that if you didn't get as much as you wanted
14 and you wanted to apply artificial, well, is it
15 worthwhile trying to get that artificial regeneration
16 on there to replace what natural regeneration has come
17 back on the area.

18 MR. FREIDIN: I think we better break for
19 lunch. I will come back to this.

20 MADAM CHAIR: We will be back at 1:30.

21 MS. SWENARCHUK: Isn't this is exactly
22 what the Board asked you not to come back to?

23 MR. FREIDIN: No, I don't think so. I am
24 not talking about the wording, I am talking about the
25 approach.

1 MADAM CHAIR: We will spend a few brief
2 moments after lunch on this subject.

3 ---Luncheon recess taken at 12:00 p.m.

4 ---On resuming at 1:30 p.m.

5 MADAM CHAIR: Please be seated.

6 MR. FREIDIN: Madam Chair, I --

7 MADAM CHAIR: One moment, Mr. Freidin.
8 We are missing some eye glasses.

9 MR. FREIDIN: Three matters. You asked
10 the other day, Madam Chair, or you made reference to
11 Dr. Osborn's evidence about 145 years.

12 MADAM CHAIR: Yes, one of the scenarios
13 for --

14 MR. FREIDIN: Righth. I don't intend to
15 review or attempt to summarize the evidence, but what I
16 can provide to you, just for your information, is a
17 copy of page 40 of the Panel 4 witness statement where
18 in paragraphs 61 and 62 there is reference to 145
19 years.

20 A graph from page 250 of the witness
21 statement and also a reference to Volume 31 and the
22 pages where that 145 discussion took place.

23 So I don't intend to do anything more
24 than that, but just to answer your question.

25 MADAM CHAIR: Thank you, Mr. Freidin.

1 MR. FREIDIN: I don't know whether the
2 other parties want that or not.

3 MS. SWENARCHUK: Yes.

4 MR. FREIDIN: Okay. The second matter.
5 Mr. Pascoe contacted me over the lunch and asked me
6 whether I could indicate what sections of the terms and
7 conditions I was referring to when discussing with Mr.
8 Benson -- we were talking about intensive and extensive
9 and I can tell you that in Exhibit 1610 is what I was
10 referring to. It was term and condition 14,
11 subparagraph 1, subparagraph (viii) which you find find
12 on page 15.

13 If you wanted to make a cross-reference,
14 you recall during the evidence of Mr. Marek, what was
15 filed was four or five pages of draft silvicultural
16 prescriptions. It was exhibit 1416, there was a change
17 made, 1614A. The term -- or the paragraph of that
18 document which is identical to 14(1)(viii) is in
19 Exhibit 1416, paragraph 1, subparagraph 1(h).

20 In fact, if you want Madam Chair, I have
21 been using my dog-eared copy of 1416 and I can give you
22 the cross referencees for all those sections if you
23 want them right now.

24 MADAM CHAIR: That's fine, Mr. Freidin.
25 I was also using 1416A, but I had two different

1 versions of the terms and conditions as well.

2 MR. FREIDIN: All right.

3 MADAM CHAIR: Thank you.

4 MR. FREIDIN: The third thing is, unless
5 Mr. Benson sucks me into a discussion about net present
6 value I will not refer to that term for the rest of
7 this cross-examination. So it's up to you, Mr. Benson.

8 THE WITNESS: I shall try my best.

9 MR. FREIDIN: Q. I have one question
10 that I would ask about natural regeneration and what
11 happens if it fails and for that purpose I would refer
12 you to Volume 264 of the transcript, that's Mr. Marek's
13 cross-examination, page 47721.

14 Do you have that, Mr. Benson?

15 A. I do.

16 Q. I am directing your attention to line
17 9.

18 "Q. If natural regeneration fails you
19 have to plant? Yes?

20 A. You have to plant.

21 Q. Yes?

22 A. Because there is no option and we
23 have a duty to regenerate or renew the
24 forest so we have to do it one way or the
25 other."

1 Do you agree with Mr. Marek's evidence?

2 A. If you had a particular area where
3 you didn't get any regeneration at all coming back,
4 yes, I would agree with that.

5 Q. What degree of regeneration -- what
6 would be your benchmark against which you would assess
7 whether you had sufficient natural regeneration or not?

8 A. Again, it's very -- it would
9 certainly vary by the management unit and so on and
10 what you were expecting to develop for that particular
11 management unit.

12 Failure could be classed as, did it
13 regenerate back to the species that you expected;
14 failure could be classified, did it regenerate back to
15 a different species but it might be acceptable anyway
16 as a second choice; or the third and most unlikely is
17 if it didn't regenerate back to anything at all.

18 Q. Would the anticipated regeneration in
19 terms of species and percentage stocking, as set out in
20 the silvicultural groundrule, play any role in terms of
21 making that assessment?

22 A. As set out in the groundrules...

23 Q. The silvicultural groundrules, Table
24 4.1.1 of timber management plans?

25 A. The way it's set up now it would play

1 some part in that.

2 Q. Is that where you see the objective
3 for regeneration in terms of species and stocking would
4 be found, in timber management plans?

5 A. The way it's set up now, they
6 generally specify for the working group what the
7 alternate treatments are and what the desired stocking
8 is, the desired and other species.

9 Q. Thank you. Would you turn to page
10 101 of the witness statement, please. At the bottom of
11 the page, the last full paragraph begins:

12 "Based on existing information, the most
13 important ecological reasons for
14 favouring natural regeneration over
15 artificial regeneration are the retention
16 of species diversity. "

17 Just stopping there. Is this a reference
18 to within stand diversity or is it a reference to
19 between stand diversity or is it a reference to both?

20 A. Reference to both.

21 Q. Thank you. If you are talking about
22 between stand diversity, do you agree with the
23 proposition that because fire burns all age classes
24 fire can result in less age diversity between stands
25 than what you would expect after harvest?

1 A. Again, it would depend upon the
2 intensity of the fire. If it is a clean sweep where it
3 destroys all trees and scattered stands on the area,
4 you would certainly have one area that doesn't have too
5 much diversity on it.

6 Q. Thank you. On page 156 -- pardon me,
7 in your witness statement you refer to the sieve
8 approach and you talked about it in your evidence as
9 well. The major sieve approach I think you called it?

10 A. The wide sieve approach, right.

11 Q. You indicated that you would need
12 large, medium and small cut-overs within that
13 discussion?

14 A. That's correct. You would want
15 areas -- large areas that have -- that are closer in
16 age-class distribution than some other areas where you
17 would have a greater distribution of age classes.

18 Q. Right. You used the phrase large,
19 medium and small cut-overs?

20 A. Yes, I did.

21 Q. Can you advise me whether the
22 cut-over sizes which are contained within Forests for
23 Tomorrow's terms and conditions fall into the large,
24 medium or small cut-over size?

25 A. What I meant there was, in order to

1 attain those medium or those large sizes you could
2 still work together with your large or small cuts so
3 that you could attain a large area that is within
4 relatively the same age class still by using smaller
5 cuts spaced throughout it.

6 I think I gave an example before, just if
7 you took a large area and if you cut one half of it say
8 now and cut another one half of it after the first one
9 half is regenerated, again in small areas, and cut the
10 second half after the first half is regenerated, say in
11 10, 15 or 20 years, you would in effect have one large
12 area of basically the same relative age class. Not
13 exactly the same, but relatively the same.

14 Q. All right. Would you have to have in
15 that scenario, have cut both the first year's cut and
16 the cut 20 years later before you would have a large
17 cut-over within your major sieve approach?

18 A. I'm sorry, you would have...

19 Q. All right. I don't want to spend
20 more than about another minute on this.

21 Is there any relationship between the
22 large, medium and small cut-over sizes which is part of
23 your major sieve approach and the maximum size
24 cut-overs in the terms and conditions?

25 A. The maximum size in the terms and

1 conditions would apply to the medium and large areas of
2 the wide sieve approach.

3 Q. If you had, for instance, a hundred
4 hectare jack pine stand, which is the maximum size that
5 the terms and conditions allow, that would fall into
6 the large cut-overs within the major sieve approach?

7 A. In a way, but in order --

8 MS. SWENARCHUK: Wide sieve approach.

9 MR. FREIDIN: Q. Wide sieve approach,
10 I'm sorry.

11 A. If you wanted to attain a larger area
12 of roughly the same age class, it would be a matter of
13 the spacing of those one hundred hectares in that large
14 area.

15 Q. This one should be quick. You
16 referred throughout your evidence, particularly through
17 your mapping exercise, to, for instance, 7,000 gross
18 hectares. Can you just very quickly tell me what you
19 mean by gross hectares in that context?

20 A. This is for the cut-over...

21 Q. Exercise. Your exercise.

22 A. By gross hectares, I just referred to
23 the large areas that were clearcut that would include
24 areas that were not cut of roughly less than 25
25 hectares in size or small waterbodies less in size.

1 Larger areas in that that were not cut were not
2 included.

3 It would also include, because you
4 couldn't really tell from the satellite image, it would
5 also include areas that were partially cut. In the
6 clearcut exercise the Ministry did, they had different
7 levels of residual timber left. I couldn't measure the
8 residual timber, so it would include all areas that
9 were cut as clearcut.

10 Where there were strip cuts or block cuts
11 I tried to excluded those if I caught them.

12 Q. Okay. So it was an attempt to
13 indicate the amount of area which was actually cut-over
14 within a large outside boundary?

15 A. Yes, as a large contiguous type of
16 clearcut.

17 Q. If you use the 7,000 gross hectares
18 it would be the area -- all right, I think I
19 understand. Thank you.

20 In relation to the Wawa District--

21 A. Correct.

22 Q. --you, I think, indicated that the
23 gross areas of the cut-over that you mapped was 6,000
24 hectares?

25 A. I think it was four.

1 Q. 4,000. All right, 4000 hectares.

2 I'm sorry.

3 Are you able to show me on map 10A where
4 that is? Map 10A I believe is the cut-over for the
5 Wawa Crown.

6 MADAM CHAIR: Is that in Exhibit 1604B,
7 Mr. Freidin, or is that a...

8 MR. FREIDIN: I am not sure, Madam Chair,
9 I'm sorry.

10 MS. SWENARCHUK: Yes, it is in Volume II
11 which is 1604B at page 296.

12 MR. FREIDIN: The reference to the 4,000
13 hectares, yes.

14 MADAM CHAIR: Thank you.

15 THE WITNESS: The area map included was
16 in this particular area over in this area. (indicating)

17 Q. Show me where that is? I have a
18 little map here.

19 A. (indicating)

20 Q. You are indicating an area which is
21 to the west of the TransCanada Highway -- part of
22 Highway 17, yes.

23 Is it in Menzies Township? Is that what
24 you are showing?

25 A. It includes Menzies and...

1 Q. That's all I need. That gives me the
2 general idea. Thank you very much.

3 Are you able to confirm that most of that
4 cut-over was on private land, in fact land owned by the
5 Algoma Central Railway?

6 A. I know there would be some there, but
7 I don't know the exact amount.

8 Q. Thank you. Could I refer you to page
9 122 of the witness statement. In the last full
10 paragraph under the heading Species Diversity you make
11 reference in the second line to an FRI map showing the
12 variety of trees species that may be found in a natural
13 stand?

14 A. Correct.

15 Q. And the map you were referring to is
16 a map of the Temagami District? Delhi Township?

17 A. Delhi Township, right.

18 Q. Can we agree, sir, as you move north
19 within the area of the undertaking within stand
20 diversity decreases?

21 A. The number of species, yes, will
22 decrease and I only gave Delhi because I had a Delhi
23 map.

24 So I agree with you, the further north
25 you go as you get into the boreal forest your number of

1 species of trees decrease.

2 Q. That's all I wanted to check with
3 you, thank you.

4 You made reference on page 126 of the
5 witness statement, in the first full paragraph after
6 the first quote, you make reference to the
7 introduction -- you state:

8 "The introduction of exotic plantation
9 species such as Norway spruce may have a
10 dramatic effect on reducing the diversity
11 of life forms on an area."

12 Mr. Cassidy asked you about that section,
13 so I will be very brief.

14 Am I correct, sir, that the only
15 knowledge that you have regarding locations of Norway
16 spruce -- pardon me, exotic species being planted in
17 the area of the undertaking is some Norway spruce which
18 is planted in small numbers?

19 If you had trouble following that I will
20 repeat it.

21 A. No, I followed it. There are some
22 other exotic species that I know that have been planted
23 here and there, but in no appreciable numbers.

24 Q. The ones which you are familiar with
25 are a small number of Norway spruce in northern Ontario

1 somewhere?

2 A. No, there are some other species in
3 northern Ontario that I am familiar with, but again
4 they are in no appreciable numbers.

5 Q. Thank you. In one of the answers to
6 the interrogatories, Mr. Benson, there is an indication
7 that the people involved in the mapping part of the
8 cut-over were a Mr. Zhi-Yi; that's correct? That's one
9 person?

10 A. Correct.

11 Q. There was also an L.H. Benson and a
12 D.W. Benson. Can you tell me who those people were?

13 A. Those two are my son and daughter
14 that I used for doing the initial map which I then
15 check and redid myself and had Mr. Zhi-Yi redo it plus
16 the other ones.

17 Q. Thank you. Mr. Benson, I am going to
18 provide to you a document which is entitled Forestry in
19 the Provinces and I will ask you some questions about
20 that in a moment.

21 Perhaps that can be marked as the next
22 exhibit, Madam Chair.

23 MADAM CHAIR: That will be Exhibit 1659.
24 That's a one page table.

25

1 all, furniture mills?

2 Q. Yes, all mills.

3 A. Yes, I would agree that it's a good
4 indication of the forest industry.

5 Q. Okay. And can we agree that the
6 figures clearly indicate that in terms of the
7 parameters which are described there across the top of
8 the page that Ontario's forest industry is most
9 closely -- is closest to that in Quebec than it is in
10 the other four provinces listed?

11 A. In terms of the harvest and number of
12 mills and direct and indirect employment, yes.

13 Q. Okay. In terms of clearcut size, I
14 think you indicated that the clearcut size in Quebec,
15 the maximum size was 250 hectares?

16 A. I believe that's correct, yes.

17 Q. And they also, in their documentation
18 they provided you, has an indication of the amount of
19 the timber which should be left between cuts as well?

20 A. Depending upon the size of the
21 cut-over area, yes.

22 Q. Right. Can we agree that what they
23 set out were 60 metres between cuts of 150 hectares or
24 less and 100 metres between cuts which were greater
25 than 150?

1 A. I can't recall the exact terminology
2 for the exact widths for the distances, but there was a
3 difference between large and small cuts.

4 Q. Is it fair to say that in many of the
5 provinces where they have -- that is providing new
6 information about clearcut size, there was a provision
7 that those sizes could be exceeded at the discretion of
8 the Director of the Forestry Branch in one case and
9 biologists in others?

10 A. Yes. Manitoba had a discretion of
11 the Forestry Department, I believe.

12 Q. Yes.

13 A. I can't recall for Saskatchewan if
14 they had something like that.

15 Q. That's fine. Thank you very much.

16 Can you turn to page 111 of the witness
17 statement. It is on this page about five or six lines
18 down from the top where you have the comment:

19 "With 100 cubic metres per hectare the
20 cut-over area could be 10 hectares in
21 size and harvested as a cost similar to a
22 larger area."

23 You continue and say -- I'm sorry.

24 You see just before that:

25 "For felling and extraction the costs

1 tend to level off after a 1,000 cubic
2 metres in the the cut block."

3 Is that right?

4 A. Correct.

5 Q. Now, if I may refer to a larger area,
6 if I may refer to the Remrod article.

7 A. Right.

8 Q. That was an article which dealt with
9 the situation in Sweden; correct?

10 A. Correct.

11 Q. The larger area referred to then was
12 in the context of the Swedish article where, as I
13 understand it, the average cut size was less than 20
14 hectares?

15 A. That's correct.

16 Q. Do you agree that there are increased
17 costs associated with smaller cuts, or to put it
18 another way, with modified harvest cutting other than
19 harvesting and extraction costs?

20 A. You would have -- the problem of road
21 costs would be the main one.

22 Q. Okay. Would you agree that the
23 planning and layout costs would be greater, the road
24 maintenance costs would be greater and that the -- do
25 you agree with those two?

1 A. Road maintenance. Planning and
2 layout, I'm not quite as clear on because I sometimes
3 think that can actually be of assistance to the cutting
4 operation.

5 Q. Okay. Would you agree with me that
6 according to the Remrod article you get approximately
7 130 cubic metres per hectare?

8 A. I did figure it out. I can't recall
9 the exact figure, but it's around that I would say.

10 Q. If we use that figure then to get a
11 thousand cubic metres, which is that figure where it
12 starts levelling off, the extraction and harvesting
13 levels off, you have to harvest approximately eight
14 hectares?

15 A. Okay.

16 Q. Now, you indicated to Mr. Cassidy
17 that you have to interpret this article in the context
18 in which it was written and that it was seeding and
19 they were dealing with small cuts.

20 I am wondering, Mr. Benson, this article
21 says, if you are comparing eight hectares where you get
22 a thousand and 20 hectares, which is the average or
23 their larger ones, it says it doesn't make a lot of
24 difference in terms of the economy of scales once you
25 go over a thousand. That's what it says to me.

1 Does it say the same thing to you?

2 A. Once you get that thousand cubic
3 metres from the area there is a slight increase, but
4 not as much as for the smaller areas.

5 Q. Right. If 20 hectares is their
6 largest clearcut, they are saying if you go up to the
7 largest clearcut, 20 hectares, it is not going to make
8 a lot of difference in terms of your harvesting and
9 extraction costs, once you are over eight hectares then
10 you have got your thousand metres?

11 A. Correct.

12 Q. Do you think that that rationale --
13 pardon me, that failure to have any difference in terms
14 of economy of scales where you are comparing 8 versus
15 20 applies where you may be comparing 8 and 208, which
16 may be the size of the cut-over in the boreal forest?
17 Can we make that leap?

18 A. Well, you couldn't apply the
19 figures -- that graph directly to Ontario. You would
20 have to make your own graph for Ontario to find out
21 where that minimum point is or the turn-around point.

22 What's the equivalent of that eight
23 hectares here in Ontario, would will have to determine
24 that for here.

25 Q. Okay, thank you. Now, there was a

1 fair bit of discussion again about what happens in
2 Sweden and Finland where we know they use smaller
3 clearcuts, that was certainly established.

4 Do you agree, sir, or disagree that in
5 those two countries they plant most of those small
6 clearcuts?

7 A. In Sweden, most of it, as I
8 understand it, is planted at the present time. In the
9 past they have used natural regeneration.

10 In Finland, I believe they use mainly
11 planting now, but they also use some natural
12 regeneration, too.

13 Q. Would you agree, sir, that in Sweden
14 and Finland where they use these small clearcuts, if
15 they wanted to rely on natural there would be more seed
16 source available for natural than you would have in an
17 Ontario situation where you were using open clearcuts?

18 A. Yes, there would be.

19 Q. All right. So in Sweden and Finland,
20 notwithstanding they have a situation in terms of the
21 size of clearcuts which is more amenable -- or which
22 would provide a seed source for natural,
23 notwithstanding that in those two countries they in
24 fact plant most of those clearcuts?

25 A. I don't know the exact breakdown, but

1 I do know they do a fair bit of planting.

2 Q. Thank you. Do you know, sir, or can
3 you provide be me with any assistance as to whether
4 there is a better road network for the purposes of
5 timber management in Finland in Sweden than we have in
6 the boreal forest of Ontario?

7 A. They have a more complete road
8 system. I wouldn't say it is always better, but it is
9 more complete. They also generally have a bit higher
10 skidding distance or hauling distance or distance from
11 the road to the tree than what we will have.

12 Q. A greater distance?

13 A. Generally of a longer distance that
14 way.

15 Q. Okay, thank you.

16 MR. MARTEL: How would that work since
17 the clearcuts here can be 100, 150, 200?

18 How can it be closer to the road with an
19 area that's only maybe 15 hectares?

20 THE WITNESS: I was considering the
21 tertiary roads.

22 MR. MARTEL: So there are more of them,
23 then?

24 THE WITNESS: Well, they will haul --
25 bring the wood further from the sump to the tertiary

1 road than what we will. Basically it is because of
2 their -- they are set up a little differently than what
3 we are for harvesting their timber with smaller areas,
4 more private lands and different type of equipment.

5 MR. FREIDIN: Q. Can you turn to the
6 Ministry of the Environment's interrogatories, Exhibit
7 1653, please. Interrogatory No. 10 is the one I want
8 you to refer to.

9 MS. SWENARCHUK: 1654 are the MOE
10 interrogatories.

11 MR. FREIDIN: Thank you. 1654.

12 MADAM CHAIR: What does it look like, Mr.
13 Freidin.

14 MR. FREIDIN: (indicating)

15 MADAM CHAIR: I have got 53 and 55.

16 MR. FREIDIN: You can borrow this copy.

17 MR. MARTEL: I have got it.

18 MR. FREIDIN: That's right. MOE
19 interrogatories in relation to Panel 5.

20 MR. MARTEL: Right. Which one?

21 MR. FREIDIN: It is interrogatory No. 10
22 which will be on page 10.

23 Q. The part I want to refer you to, Mr.
24 Benson, is the comment in the last sentence, you say:

25 "For natural regeneration where the

1 compositoon of the forest may be more
2 varied, similar to the natural forest,
3 the stocking could vary from 40 to 70 per
4 cent depending upon the percentage
5 composition of the conifer in the
6 original forest."

7 I understood you basically to be saying
8 that depending on the forest condition that stocking
9 could be acceptable anywhere between 40 and 70 but it
10 would depend on the site?

11 A. Yes. What I meant was that you
12 would -- if you are trying to get back what was there
13 before, that might have been between 40 and 70. So if
14 there was 70 per cent there before, then you would set
15 your standard to try to get back 70 if you could. If
16 it was 40 before, try to get back the 40.

17 Q. Just one moment, please. The
18 stocking that you referred to here which you say could
19 vary from 40 to 70 per cent--

20 A. Yes.

21 Q. --are you talking about stocking
22 which would be measured in a young stand?

23 I only ask that because when you were
24 speaking to Ms. Seaborn you said that there are two
25 ways of looking at stocking. You measure stocking in a

1 mature stand through basal area or crown closure.

2 A. Right.

3 Q. When you are talking about a young
4 stand you look at number of trees per hectare to
5 acquire that?

6 A. I am talking about a young stand and,
7 of course, the problem is how do you link that to the
8 older stand.

9 Q. Right.

10 A. That's a link that's not there.

11 Q. That's a link that we will hopefully
12 develop as we obtain growth and yield information?

13 A. Yes, I would hope so.

14 Q. Okay. So you are saying in some
15 cases then achievement of 40 per cent stocking in the
16 young stand would be satisfactory in some cases, in
17 some cases it wouldn't?

18 A. Yes, based upon what the original
19 stand was.

20 Q. Okay, thank you. You also made a
21 comment on page 110 of your witness statement --
22 pardon me, 106 of the witness statement, in the second
23 line that:

24 "Stocking standards in the late 60's
25 and 70's were more demanding, 70 per

1 cent stocking to the desired species.

2 Thus the results would probably be more
3 dismal if the earlier standards were
4 used."

5 If I could just have one moment, Madam
6 Chair.

7 What was the source of your information
8 that the stocking standards in the late 60's and 70's
9 were more demanding?

10 A. Well, I was a forester with the
11 Ministry at the time and there were stocking standards
12 that we had that had that limit set. I don't know
13 exactly what year they were established, but the ones
14 that I was familiar with had 70 per cent as a stocking
15 standard for a plantation. I'm sure I have an old copy
16 somewhere if you wanted me to dig it up.

17 Q. How far back does it go, When you say
18 you saw standards which were 70 per cent?

19 A. How far back?

20 Q. Yes. Are we talking the 70's or 60's?

21 A. It would be early 70's.

22 Q. Well, Mr. Benson, let me give to you
23 a document entitled Stocking Standard Comparison.
24 Perhaps it can be marked as the next exhibit.

25 MADAM CHAIR: This will be Exhibit 1660.

1 Do you want to describe it, Mr. Freidin?

2 MR. FREIDIN: Yes. I think we can, for
3 the purposes of marking it an exhibit, entitle it
4 Stocking Standard Comparison, source being Exhibit 558,
5 557, 494 and MNR Panel No. 4.

6 ---EXHIBIT NO. 1660: Document entitled Stocking
7 Standard Comparison, source being
8 Exhibit 558, 557, 494 and MNR
9 Panel No. 4.

10 MR. FREIDIN: Q. Now, Mr. Benson, this
11 document again purports to report information contained
12 in the sources noted at the bottom regarding the
13 minimum stocking percentage and the satisfactory or
14 objective stocking percentage for the two primary
15 coniferous commercial species that we have been
16 speaking about in the hearing, jack pine and black
17 spruce.

18 Would you just agree that if those
19 numbers which are shown there are a true reflection of
20 what's in the exhibits, that in fact there is virtually
21 no difference between the stocking standards used in
22 the -- at least early 70's up to '87 in relation to
23 those two species?

24 A. There was a middle category, too,
25 between the 40 and 60 that was -- I can't recall the
title of that category, but there was a middle category

1 in there.

2 If those are the numbers that the exhibit
3 say, then I would have to say that my number of 70 per
4 cent is in error, but I would like to check the
5 document that I had to make sure.

6 Q. Sure, that's fine. Thank you. What
7 is the exhibit number on that, Madam Chair?

8 MADAM CHAIR: 1660.

9 MR. FREIDIN: Thank you.

10 Q. A few questions about fish habitat
11 and shoreline reserves and that sort of thing, Mr.
12 Benson. Very few.

13 During some of your evidence about that
14 particular subject area Mr. Martel raised a concern or
15 made an observation as to how one would go about making
16 sure there was protection for animals which may want to
17 come down and eat and drink at the river or lake.

18 Is it your understanding, sir, that the
19 way that the timber management planning process is
20 designed at the present time, that it would be the role
21 of the biologist on the planning team to be concerned
22 about that sort of thing and make the necessary input
23 into decisions to make that those sorts of things were
24 taken care of?

25 A. The way it is set up now, the

1 biologist would give that direction.

2 Q. Thank you. Could we agree, Mr.
3 Benson, that wild fire in many case burns down to the
4 water's edge?

5 A. In many cases, yes, it will.

6 Q. Thank you. There was a discussion
7 regarding roads during your evidence and the potential
8 for erosion and then, as a result, sedimentation of
9 waterbodies. You dealt with that matter; is that
10 correct?

11 A. That's correct.

12 Q. Beyond the mandatory standards which
13 are prescribed in the environmental guidelines for road
14 construction and water crossings, are you suggesting
15 that something else be done?

16 A. I think what I saw with roads -- the
17 major detrimental effect I would put in two areas.
18 One, the tertiary roads. I think there could be more
19 foresight in putting them in or taking corrective
20 measure after they are not being used anymore.

21 And, secondly, the roads after the
22 harvesting is finished, what happens to those roads?
23 Are they allowed to deteriorate, how do you treat the
24 sides of ditches and so on? There seems to be a
25 problem in that particular area, both the maintenance

1 of them and what is the long-term objective for some of
2 those roads.

3 Q. Do you agree that the guidelines that
4 I referred to apply to tertiary roads?

5 A. I believe they do, yes.

6 Q. Can I provide you, sir, with a copy
7 of a letter from the Federation of Ontario Naturalists
8 signed by Mr. Huff to the Ministry of the Environment
9 dated December 23rd, 1987, which I would ask be marked
10 the next exhibit, Madam Chair.

11 MADAM CHAIR: This will be Exhibit 1661.

12 MR. FREIDIN: Did I say the Ministry of
13 the Environment?

14 MADAM CHAIR: I think so.

15 MR. FREIDIN: Ministry of Natural
16 Resources.

17 MS. SEABORN: Thank you, Mr. Freidin.

18 ---EXHIBIT NO. 1661: Letter from the Federation of
19 Ontario Naturalists signed by Mr.
20 Huff to the Ministry of Natural
Resources dated December 23rd,
1987.

21 MR. FREIDIN: Q. In this letter, Mr.
22 Huff on behalf of the Federation of Ontario Naturalists
23 states:

24 Overall it appears...." in reference to
25 the environmental guidelines for the construction of

1 access roads, and I am suggesting to you that that is
2 the same document that I described and we were
3 discussing, the environmental guidelines for road
4 construction and water crossings, that he states:

5 "Overall it appears to be a good set of
6 guidelines which, if followed, will help
7 to avoid and mitigate environmental
8 degradation."

9 Then he goes on to indicate there are two
10 parts which should be improved by using some more
11 precise language.

12 Do you agree or disagree with the overall
13 assessment of that document as made by Mr. Huff on
14 behalf of the FON?

15 A. From what I recall of those road
16 guidelines, I think they are fairly good.

17 The problem I had was, like, for example,
18 I mentioned it a couple of times where the ditches
19 could be seeded in. That's in the guidelines, but yet
20 it wasn't done in those particular instances that I
21 pointed out.

22 Q. Okay, thank you. Do you agree, sir,
23 that the amount of erosion and, therefore, possible
24 subsequent sedimentation of waterbodies which can occur
25 from any cut-over area is affected by the degree of

1 disturbance of the forest floor?

2 A. That's one factor that can control
3 it, yes.

4 Q. At page 122 of your witness
5 statement, in the second full paragraph, you make the
6 statement that:

7 "Wind can cause erosion. The value of
8 wind breaks of trees for preventing
9 erosion of agricultural land is known,
10 but the extent of the damage caused by
11 the erosion on large cut-overs is not
12 quantified."

13 Can we agree, sir, that in an
14 agricultural situation there is no forest floor or
15 nothing similar to the LFNH layer, but rather the
16 topsoil is exposed to wind?

17 A. If it's agricultural land for crops,
18 yes, that would be right.

19 Q. Can you refer to page 42 of the
20 witness statement, please. In item No. (c) you
21 indicate:

22 "Management plans do not indicate
23 the historical development of their
24 management."

25 Are you aware, sir, of whether the

1 present planning process has such a requirement?

2 A. There is a requirement to include the
3 past, I believe it is 20 years in one of the
4 appendices, the amount of cut and silvicultural work
5 that has occurred.

6 Q. Can I refer to you page 30 of the
7 Timber Management Planning Manual which is Exhibit 7.

8 MADAM CHAIR: Which page is that, Mr.
9 Freidin?

10 MR. FREIDIN: Page 30.

11 MADAM CHAIR: Thank you.

12 MR. FREIDIN: Q. It refers on that page
13 or describes on that page the requirement for the
14 Report of Past Forest Operations. You will see in the
15 second full paragraph -- do you have page 30 or -- you
16 don't have it yet. I'm sorry.

17 A. I have the blue page 30.

18 Q. That's it. You see the heading is
19 Table 4.7, Report of the FTG Assessment and Success?

20 A. Right.

21 Q. I'm sorry, my pages are all mixed up
22 here.

23 I am going to leave this until after the
24 break, Madam Chair, my page numbers aren't right.

25 On page 45 of your witness statement, you

1 made the comment about six lines down in reference to
2 Dean Baskerville's audit exercise back in 85/86, you
3 say that:

4 "Baskerville experiences the same
5 difficulty in obtaining basic management
6 information from the Ministry, even
7 though he was employed by them."

8 What exactly do you mean by that and what
9 is the source of your information?

10 A. The difficulty has to do with -- it
11 is in the next sentence there, the fact that for the
12 117 units he was only able to get data for 80 of the
13 units in his reporting.

14 Q. And --

15 A. Then I have the quote there, too,
16 where he says that:

17 "It's not possible to easily recover
18 general performance data that relates to
19 implementation and management of the
20 resource."

21 Q. And so I see what your interpretation
22 is of Dean Baskerville's audit, and I would refer you
23 to Volume 164 of the transcripts, please, at page
24 29,041.

25 A. 29,100 and...

1 Q. 29,041. Dealing with this issue of
2 what difficulty Dean Baskerville had or didn't have.

3 Starting at line 4, a question from Mr. Turkstra:

4 "In the case of the six units, were you
5 given that correspondence at all those
6 levels?"

7 He says:

8 "Yes, anything I asked for I got. I
9 don't recall every having to ask twice."

10 If we go to page 29,043, Mr. Turkstra
11 asked at line 8:"

12 "Were you satisfied with the level of
13 information that was given to you by the
14 Ministry in the course of that audit?"

15 "A. Yes. As I said earlier, I don't
16 recall an instance where if something
17 existed and I sought it that I didn't get
18 it. There was occasion when I didn't get
19 it, but it turned out that it would have
20 required immense compiling problems,
21 immense amounts of compilation in order
22 to get the numbers that I sought.

23 Whenever anything was available it was
24 made available to me."

25 Leaving aside the issue the raises and

1 you refer to on page 45 about the ability to recover
2 data which was available, do you agree that he clearly
3 indicated that he had full cooperation of the Ministry
4 during his audit? In fact, he received everything he
5 asked for?

6 A. According to the statement just read,
7 yes.

8 Q. Okay, thank you. You made the -- I
9 don't have the transcript reference and if Ms.
10 Swenarchuk wants to object or if you can't agree that
11 you said this, then I will find it later.

12 I have you down as saying:
13 If you spend all your time getting
14 information you will never get the job
15 done.

16 Do you remember making a statement to
17 that effect?

18 MADAM CHAIR: The Board remembers Mr.
19 Benson making a statement to that effect.

20 MR. FREIDIN: Q. I would like you to
21 explain what you meant by that and perhaps give me some
22 examples?

23 A. I can't recall the exact context.

24 Q. I think I can help you. It was in a
25 discussion about when we could change from the wide

1 sieve approach and in relation to that Mr. Hanna asked
2 what criteria would be used to determine when we can
3 use a different approach, and it was in relation to
4 that that you said:

5 If you spend all your time getting
6 information you will never get the
7 job done.

8 I would ask you to explain what you meant
9 by that and perhaps give some examples?

10 A. Well, I think what I mean by that is
11 that we are dealing with a natural resource that has a
12 lot of unanswered questions and a lot of relationships
13 in it that we don't understand, even from the point of
14 view of the inventory.

15 There is questions as to how precise or
16 how accurate is the FRI, and we could spend a lot of
17 time trying to refine it, but you couldn't really stop
18 things now until you got it refined to a finer degree.
19 You would still have to make decisions based on the
20 best information that you had available.

21 The general point is that you can always
22 try to get better information, but in a situation where
23 you are trying to keep the process going you are
24 working with the best data that you have available.

25 Q. Okay, thank you very much. Could

1 you -- we may not need this. Photograph 345 was a
2 photograph of the Kiashke unit in which there were a
3 number of small cuts.

4 A. Correct. It was a ground shot;
5 right?

6 Q. There was an aerial shot that you
7 used as well. The aerial shot I think you used was
8 photo 14 where you indicated in the right-hand corner
9 the Kiashke unit and you said you could see that they
10 used all these block cuts. Do you remember that?

11 A. I remember that. I think it would be
12 photo 343, though.

13 Q. All right. Leaving aside the
14 photograph, you did show some photographs to
15 demonstrate that on the Kiashke unit they were using
16 small block cuts?

17 A. That's correct.

18 Q. Was the purpose of doing that to
19 indicate that they were using natural regeneration in
20 that unit?

21 A. They were using both natural and
22 artificial regeneration in that unit.

23 Q. Are they using artificial
24 regeneration on those small block cuts?

25 A. In some cases they haven't done

1 anything yet. On some of them they have some
2 artificial coming back in and on others they have both
3 artificial and natural.

4 I'm sorry, on some of them they have
5 natural coming in and on others they are using both
6 artificial and natural.

7 Q. Mr. Benson, let me produce for you a
8 three page -- a four-page document which is composed of
9 the following: Table 4.4 which is the report of
10 renewal and maintenance operations from the Kiashke
11 unit for the term 1983 to 1988; it has Table 4.19,
12 forecast of renewal and maintenance operations for the
13 five-year term, 1988 to 1993; it has page 29 of the
14 timber management plan for the five-year term 1988 to
15 1993, it is page 29 of that; and it also has page 37 of
16 that plan which is Table 4.12 dealing with operational
17 prescriptions for areas of concern.

18 MADAM CHAIR: That will be Exhibit 1662.

19 ---EXHIBIT NO. 1662: Four-page document consisting of
20 Table 4.4 which is the report on
21 renewal and maintenance operations
22 from the Kiashke unit for the
23 term 1983 to 1988; Table 4.19,
24 forecast of renewal and
25 maintenance operations for the
five-year term, 1988 to 1993;
page 29 of the timber management
plan for the five-year term 1988
to 1993; Table 4.1.2 dealing with
operational prescriptions for
areas of concern.

1 MR. FREIDIN: Q. Mr. Benson, can we
2 agree that if we look at the first two pages of that
3 exhibit, Table 4.4 and Table 4.19 for the time periods
4 I have indicated, that there is no renewal -- no report
5 of any natural regeneration from '83 to '88, and in
6 terms of the forecast for 1988 to '93 we only got 15
7 hectares that's going to be regenerated through planned
8 natural?

9 A. That's correct. The point I was
10 making, though, was that there was natural regeneration
11 on the block cuts, too. I don't know what the planned
12 was that way.

13 Q. All right. So can we agree, sir --
14 it is my information that on the Kiashke unit they have
15 been planting all of their block cuts since
16 approximately 1986. Are you able to confirm my
17 information?

18 A. No, I couldn't confirm the details of
19 what years they planted.

20 Q. Assuming whether that's correct or
21 not, I take it from your earlier answer then that the
22 point you were trying to make when you were dealing
23 with the Kiashke unit was not to say that they were
24 using block cuts for the purposes of having planned
25 natural, you were saying they were just getting natural

1 regeneration?

2 A. No, the point was that they were
3 cutting smaller areas and they were getting some
4 natural regeneration on some of those areas.

5 I don't think it was necessarily planned,
6 but I think you could plan to get more natural
7 regeneration on that area than what they do.

8 Q. If you turn to the last page, page 37
9 of the 1988 to 1993 timber management plan, it
10 indicates that in relation to stand No. 80 that the
11 intent of the four hectare block cuts was to deal with
12 the concern about aesthetics and snow drifts control, I
13 guess, on certain types of soils and that the
14 prescription was immediately regeneration of block cut
15 by planting jack pine container stock.

16 Do you have any basis on which to
17 indicate that that reference in any way misdescribes
18 the intent of using cut blocks in that particular
19 stand?

20 A. No.

21 Q. Okay.

22 MR. FREIDIN: Madam Chair, it might be a
23 good time for a break.

24 MADAM CHAIR: Thank you, Mr. Freidin. We
25 will be back in 20 minutes.

1 ---Recess taken at 2:40 p.m.

2 ---On resuming at 3:05 p.m.

3 MADAM CHAIR: Please be seated.

4 MR. FREIDIN: Mr. Benson, I was ask to
5 finish my cross-examination by four o'clock, so let's
6 see what we can do.

7 MS. SWENARCHUK: I will sit down, Mr.
8 Freidin. I won't interrupt.

9 MR. FREIDIN: Don't interrupt, Ms.
10 Swenarchuk.

11 MR. MARTEL: We won't say a word.

12 MR. FREIDIN: No, I want the Board to ask
13 all the questions if feels necessary.

14 MADAM CHAIR: Are you telling Mr. Benson
15 he is going to be home for dinner tomorrow night, Mr.
16 Freidin?

17 MR. FREIDIN: I am.

18 MS. SWENARCHUK: I will be calling him
19 very briefly in the morning.

20 MR. FREIDIN: Q. Could you turn to page
21 85 of the witness statement, please.

22 Actually, if I could direct your
23 attention to 84 first. I am going to point to two
24 sections, one on 84 and one on 85 which appear to me to
25 be a contradiction and I want your comment.

1 On the first full paragraph on page 84

2 you say:

3 "The most significant point is that the
4 value added does not increase with
5 intensive silviculture."

6 On page 85 in the first full paragraph

7 you say:

8 "If the amount of the total production of
9 tonnes of paper was to increase in the
10 future as a result of the investments in
11 intensive silviculture, the total value
12 added to the economy would increase...."

13 and then you go on.

14 Now, that appeared to me to be a
15 contradiction and could you comment, please?

16 A. The value added per cubic metre
17 wouldn't -- is really the first paragraph that you are
18 talking about.

19 Q. Yes.

20 A. With intensive silviculture, if you
21 are increasing the yield for a particular hectare, you
22 would be increasing the total yield from that hectare.
23 So that if you are calculating it in terms of value
24 added, your total value added from that hectare would
25 be increased.

1 Q. Okay. So although -- just a summary
2 then. Although intensive silviculture would not
3 increase the value per cubic metre, it will in fact
4 increase the value added per hectare assuming you get
5 more volume off of an intensively managed hectare than
6 you do off of a naturally managed hectare?

7 A. The basis I used for calculating the
8 value added, there was a certain volume for the tonne
9 of paper, so the cost for producing the cubic metres to
10 produce that tonne of paper were based on an
11 intensive/extensive management.

12 So based on the cubic metres for that
13 tonne of paper, the first paragraph applies. If you
14 took a look at the total volume production from a
15 hectare and expected greater volume from intensive
16 management, well then there would be a total value
17 added, if you like, would be higher.

18 Q. More value added per hectare with the
19 intensive; right?

20 A. Yes, presuming you were using all the
21 wood that you were producing.

22 Q. Okay, thank you. So when we look at
23 page 94 and 95 of the witness statement where you have
24 those two tables and you are talking about -- you do
25 the calculations on those two pages, those in fact are

1 talking about what the value added would be per cubic
2 metre?

3 A. This is for five cubic metres in this
4 case.

5 Q. Right. But for five cubic metres you
6 are looking at what the value added is if you have it
7 off of an intensively managed stand as opposed to an
8 extensively managed stand?

9 A. That's right.

10 Q. I have done some calculations, Mr.
11 Benson, based on your own figures of 200 cubic metres
12 per hectare off of an intensively managed stand as
13 opposed to a hundred off of a naturally regenerated
14 stand, that the value added per hectare is \$18,000 more
15 per hectare for intensive.

16 Let me just -- the best way to do this is
17 to give you a table.

18 A. Maybe it might be just as clear to
19 say it would be twice as large because I assumed a
20 yield of twice as much with the intensive management.

21 Q. Okay. Value added --

22 A. So if you looked at the total value
23 added from it, yes.

24 Q. Thank you. If we could go back to
25 page 85, you refer in the first quote -- or in the

1 first full paragraph to Anderson where he states that:

2 "Capital can certainly seek alternative
3 employment by the middle of the 21st
4 Century and the provisio of jobs in the
5 forestry sector means not the protection
6 of present workers' occupations in
7 northern Ontario, but rather the
8 provision of these occupations for their
9 grandchildren and great grandchildren who
10 may or may not live in the province, much
11 less be attracted to employment in the
12 forest sector of the economy."

13 Are you advocating that these jobs for
14 the grandchildren and the great grandchildren just may
15 not be necessary, they may be going somewhere else and
16 therefore we should somehow ignore the benefits that
17 the forest industry in fact brings to Ontario now?

18 A. No. I'm not suggesting that at all.
19 It's a matter of looking for the best investment of the
20 money to provide the maximum benefit from it, and the
21 idea is not to eliminate forestry, but to try to keep
22 forestry going, but at the cheapest cost.

23 Q. With the consideration of keeping
24 communities viable?

25 A. Well, my whole -- I don't want to

1 violate our net present value principle here, but...

2 Q. Sorry, Madam Chair.

3 A. The whole idea is to keep the forest
4 producing and I would like to try to keep it producing
5 as cheaply as possible because I think that gives us a
6 better basis for staying in world markets, but
7 certainly not to eliminate the industry or to have no
8 jobs based on forestry.

9 No, that wasn't the idea of this
10 statement.

11 Q. Okay. Two questions on OWOSFOP which
12 we dealt with in great detail the other day. You said,
13 I believe, that the weighted area method should only be
14 used for the short period and should be adjusted later;
15 is that correct?

16 A. Yes, particularly when you have a
17 surplus of overmature wood or when you could possibly
18 use it, although I never really seen it used outside of
19 Ontario for when you have a surplus of immature wood.

20 Q. Can you confirm for me, sir, that the
21 average age method takes the change in the forest
22 structure into account and, therefore, there is no need
23 to change models or cease using a weighted area method
24 just because your age-class structure changes?

25 A. I think you have to take a look at

1 what volumes you want to be produced from that
2 management unit in the long term and that to me is more
3 of on overriding consideration.

4 I think before -- like, there is various
5 methods that you can use for determining the allowable
6 cut of a management unit, but my principle would be
7 that you should have an idea of what wood can that
8 forest produce in the long term and try to work towards
9 that objective.

10 What particular method you use to achieve
11 that, I don't think it really matters and there is
12 technical things about OWOSFOP I don't like, but the
13 most important thing is, I think, to establish what can
14 you sustain in the long run and what amount can you cut
15 now to reach that level in the long run.

16 Q. The last question in relation to this
17 subject matter. You presented a number of graphs in
18 your witness statement which show a line of maximum
19 allowable depletion which was calculated through the
20 use of OWOSFOP. You do that in a number of the graphs;
21 correct?

22 A. Right.

23 Q. Do you agree, sir, that you can use
24 OWOSFOP to simulate various scenarios, including a
25 scenario which will result in the same area being

1 harvested from term to term, and by term to term I mean
2 management unit to management unit?

3 A. I'm not quite clear on your question,
4 I'm sorry.

5 Q. All right. Do you agree with OWOSFOP
6 you can actually simulate a scenario which will in fact
7 result in the same area being harvested from timber
8 management to timber management plan to timber
9 management plan?

10 A. Within a rotation that you would
11 harvest the same area?

12 Q. Yes, you can simulate that.

13 A. With OWOSFOP, the total area
14 harvested within a rotation period equalled the total
15 harvest in the next rotation period?

16 Q. No, every five years.

17 A. Well, to simulate a normal area cut
18 then is really what you are asking. Yes, you can
19 simulate that with it.

20 Q. Would you agree that if you have an
21 even flow of area within reasonable pluses and minuses
22 you are going to have a relatively even flow of volume?

23 A. The volume flow, again, is going to
24 depend upon the age-class structure of the forest and
25 it will generally not fluctuate as much as if you used

1 OWOSFOP, but it would still fluctuate somewhat.

2 Q. Thank you. Could you refer to
3 photograph 477, please.

4 Three more areas to go, Mr. Benson.

5 MADAM CHAIR: You do a good job, Mr.
6 Freidin.

7 MR. FREIDIN: You don't know how long the
8 other two are, Madam Chair.

9 MADAM CHAIR: I assume they will be
10 short.

11 MR. FREIDIN: I am going to ask a series
12 of questions about the pictures from Temagami.

13 Q. Now, this is planted red pine; is
14 that right?

15 A. That's correct.

16 Q. And --

17 A. Was that 477?

18 Q. Yes.

19 A. Okay.

20 Q. That's planted red pine?

21 A. Right.

22 Q. And you indicated that there should
23 have been more artificial here in light of past
24 practice.

25 Actually, Mr. Benson, we can save some

1 time, let's forget that picture.

2 Turn to photograph 493. It is also
3 Temagami.

4 A. Photo 493?

5 Q. Photo 493. I understand one of the
6 reasons you showed that picture was to indicate that
7 you didn't like blading?

8 A. That's correct.

9 Q. If we go to photograph 502, it is a
10 picture of the Lake Temagami area which has the skyline
11 reserve nearest to the lake and which has an area of
12 hardwood regeneration in the foreground; is that
13 correct?

14 A. That's correct.

15 Q. And, as I understand your evidence,
16 the hardwood there in the foreground was the result of
17 the past practice of high-grading which involved a
18 number of different cuts?

19 A. I was using that as an example of
20 that and I would presume it to be true because you find
21 that pattern around the whole lake. I don't know the
22 specific treatment in each particular area around the
23 lake.

24 Q. Would you agree or disagree, sir,
25 that in order to regenerate or rehabilitate that poplar

1 stand to white pine, if that was your objective, that
2 it would be necessary to engage in heavy site
3 preparation?

4 A. For white pine?

5 Q. Yes. If you wanted to regenerate
6 that area which you said at one time was white pine,
7 you wanted to in fact return it to the species which
8 was there before harvest, that you would almost -- you
9 would unlikely have to be involved in heavy site
10 preparation?

11 A. No, I wouldn't use that treatment for
12 white pine for that area.

13 Q. I'm talking about -- all right. Even
14 in the area where you have got the poplar and you
15 wanted to convert the poplar back to white pine, you
16 wouldn't have to use heavy site prep? Is that your
17 evidence?

18 A. That's what I would say. I would not
19 want to put white pine -- if you are going to have
20 heavy site prep, I am presuming that you are getting
21 rid of the hardwood in the area and clearing the area
22 and putting white pine into a cleared area.

23 White pine doesn't do as well in an open
24 type of plantation as what it would growing under
25 cover. If you want to put red pine there and clear

1 that off and put red pine there I will follow what you
2 were saying.

3 If I was putting white pine I would try
4 some other technique. Possibly one technique that has
5 been suggested is to try some underplanting of white
6 pine.

7 Q. Can you turn to page 353 of your
8 witness statement which is in Volume No. II. Do you
9 have that?

10 A. I do. 353?

11 Q. 353. In the second full paragraph,
12 in the last sentence, you state:

13 "Areas that have been high-graded in the
14 past will require some intensive
15 silvicultural work to rehabilitate them
16 to productive forests."

17 Is that a statement which applied to
18 returning areas to white pine after they were
19 harvested?

20 A. Yes. And I think in the Temagami
21 area, because of the other uses, all we were arguing
22 about was which particular method would work, and I
23 wouldn't use that particular method.

24 In the Temagami area I think it's the
25 case where that area to be rehabilitated requires some

1 artificial regeneration to regenerate a hard to
2 regenerate species like white pine.

3 Q. Okay, thank you. Could you turn to
4 page 59 of your witness statement. Do you have that?

5 A. Yes, I do.

6 Q. Mr. Hanna was asking some questions
7 about page 59 and was talking to you about guideline
8 approach or the use of guidelines and he was talking
9 specifically about the Moose Habitat Guidelines and you
10 agreed with him that the use of guidelines don't deal
11 expressly with items (a) and (b) -- principles (a) and
12 (b) on page 59 and that, therefore, their use would
13 violate those two principles.

14 Could you refer to Volume 166, page
15 29,594. I think this is the last reference to Dean
16 Baskerville that I am going to ask you about.

17 Dean Baskerville was being examined by
18 Mr. Hanna in relation to the use of the guideline
19 approach as opposed to other approaches he was
20 suggesting. I want to know if you agree with the
21 comment of Dean Baskerville at the bottom of that page
22 and over on to the next page where he says, in relation
23 to considering doing something other than guidelines:

24 "I think that you need a point of
25 departure and that point of departure had

1 best be the best available current wisdom
2 is what the guidelines are...." and it
3 goes on to talk about GIS.

4 Do you agree, sir, that the guidelines
5 are in fact the best available current wisdom in
6 relation to the matters that they address?

7 A. We are speaking here of the moose
8 guidelines?

9 Q. He is talking about utilizing
10 guidelines generally I think.

11 MS. SWENARCHUK: I think that it is
12 important that you be quite clear, Mr. Freidin, on
13 whether this is a general question or refers to a
14 specific set of guidelines.

15 MR. FREIDIN: Q. Let's limit it to
16 moose.

17 A. Well, the points I was trying to make
18 on page 59 is that you would have to determine the
19 production levels for a variety of items, not just
20 moose or timber. And then if you consider all of
21 them -- well, you have to consider all of them for a
22 management unit.

23 Now, how do you determine those
24 production levels could be based upon the guidelines,
25 but I would also want to base them upon the biologists

1 that are familiar with the area and have better
2 information, up-to-date information.

3 Q. All right. During a description --
4 another matter. During a description of your field
5 experience and knowledge of management units you had
6 involvement or responsibility, you indicated, in
7 relation to the Ontario paper management unit?

8 A. Correct.

9 Q. That you had moderate familiarity in
10 that you had a good technical crew which reduced the
11 time necessary to get familiar with the unit.

12 Can you explain to me what you meant by
13 that?

14 A. Oh. You don't work alone with a
15 forest; you have to rely upon a number of people.

16 In that case, it was the technical staff
17 working out of Hornepayne that had familiarity with the
18 area and not only that, they worked together well as a
19 unit. So I had one technician, half a technician
20 really as a forest technician, but when it came time
21 for any type of operation the whole crew pitched in to
22 work on it; the mechanic, the fish and wildlife
23 technician. They all helped out with timber projects.

24 I think the other thing, too, on that if
25 I could expand on that part just a bit. It was the

1 same thing as North Bay in one of the units there,
2 where the technician there was quite familiar with the
3 area and when I first went to that unit I mentioned to
4 him my ideas about managing for white pine, which I
5 heard him mutter some oath in French and wondered what
6 it was about. I asked him and he told me: Well, I was
7 the sixth forester on that unit since he had been
8 working there and every forester had a different idea.

9 I asked him to explain to me: Well, what
10 is the best way and he said he couldn't tell me but he
11 could show me. So we spent a week going through the
12 unit and he showed me the past practices and trials and
13 so on and it revealed to me what had been going on in
14 that management unit and it gave a much clearer picture
15 as to what was happening, and that's basically what I
16 meant by a good crew.

17 Q. Thank you very much.

18 MR. MARTEL: That's three topics.

19 MR. FREIDIN: Sorry?

20 MR. MARTEL: That was the third topic.

21 MR. FREIDIN: I am into the
22 miscellaneous, Mr. Martel.

23 (laughter)

24 Two more miscellaneous, then I am into my
25 last topic. You indicated during your

1 cross-examination by the Ministry of the Environment
2 that you did not review the comprehensive plans. I am
3 wondering what up meant by that.

4 A. I think this was in reference to the
5 areas of concern, the comprehensive plans, or there is
6 really a one or two page document that concerns area of
7 concern where it outlines the alternative and the
8 decision.

9 Q. You didn't look at those?

10 A. I looked at some many of them, but as
11 I was saying, the numbers in a management plant are
12 getting excessively large and it can be well over a
13 thousand for a particular management unit for a
14 five-year period.

15 There is a problem from the point of view
16 of trying to examine them, a practical problem of
17 trying to relate them to the area -- where is the area
18 of concern on the map to try to relate the document to
19 the map to the field.

20 Q. So you would be in favour of some
21 process where there would be a more easy reference then
22 of the actual areas of concern to a specific
23 geographical spot on a map?

24 That's really what you are saying. If
25 there was a specific provision that made it easy to go

1 from the area of concern and actually go right to the
2 map and say there it is right on the map, that's really
3 what you want?

4 A. Well, that's part of it. There is
5 also the problem of the areas of concern. Some are
6 standard type of things where they are not really a
7 comprehensive plan, they are following the guidelines
8 which are standard as opposed to areas of concern where
9 there really is more -- or should be more of a
10 comprehensive plan and evaluation of what the best
11 treatment is for a particular spot.

12 Q. Very good. Thank you. Mr. Benson,
13 you teach forest resources management and forest
14 resource management planning; is that correct?

15 A. That's correct.

16 Q. Is there a branch or there other
17 professors who teach silviculture?

18 A. There's two other professors that
19 teach silviculture.

20 Q. Does any part of your course deal
21 with the subject matter of silviculture?

22 A. The management plan does because it
23 involves silviculture in putting together the
24 management plan.

25 Q. But does it deal with the actual

1 science of silvics or does it deal with how one goes
2 about reporting or recording in a management plan a
3 decision which has been made based on silvicultural
4 considerations?

5 A. It sort of deals with both right at
6 the present time because our present course, the
7 silvicultural is taught the same year as the management
8 plan, so I end up -- I have to give them some basic
9 idea on what silvicultural treatments to apply. That's
10 something we are trying to correct in our new
11 curriculum.

12 I think a basic problem too, a lot of
13 these questions -- like, a forester gets a variety of
14 training and even teaching and we have to teach a
15 variety of subject areas.

16 Q. I apologize. I have two more
17 miscellaneous questions.

18 Can you turn to Exhibit 1644 and 1645.
19 These were documents where Mr. Cassidy asked you some
20 questions about NSR on the Gordon Cosens Forest.

21 Just to make sure I have got the right
22 document in front of me, Mr. Benson, is 1645 a document
23 which states on the front it's the five-year operating
24 plan for Spruce Falls Power and Paper Company?

25 A. I'm sorry, which number was that?

1 Q. That's 1645. In 1644 you
2 introduced -- all right.

3 As I understand it, 1645 was, according
4 to your evidence, an excerpt from the five-year
5 operating plan for the Gordon Cosens Forest for the
6 period 1985 to 1990; is that correct?

7 A. No, it was my understanding it was
8 from the management plan for the Gordon Cosens Forest
9 for that time period.

10 Q. For the time period 1985 to 1990?

11 A. Right.

12 Q. It is my information, sir, that it is
13 from the operating plan for the period 1980 to 1985.
14 Is there some way you can advise me whether my
15 information is correct? Somebody's information is
16 incorrect.

17 A. Well, I can check it out. I would
18 have to check it out with the Ministry. All I know is
19 this was the information provided to us for the current
20 management plan for that unit and there was no date on
21 it.

22 Q. All right. Let's turn to 1644. What
23 Mr. Cassidy was doing here was trying to point out or
24 pointing out that the difference between the NSR area
25 in 1972, which is on the first page of exhibit 1644,

1 the bottom of the page, third column. Do you see that?
2 332,444 was the figure?

3 A. Correct.

4 Q. He then took you to the second page
5 of the exhibit which was the 1986 inventory which was
6 176,437 NSR?

7 A. Right.

8 Q. Exhibit 1645 I think was the one
9 which you indicated caused you some confusion. If we
10 look at the NSR it says 77,976.

11 A. Right.

12 Q. That was a figure I think that caused
13 you confusion, is that not right, if you compared to
14 the two other figures I referred you to?

15 A. That's right.

16 Q. If we look at the third -- well, look
17 under the table, the third item is Unclassified Forest
18 Land?

19 A. Right.

20 Q. Is 181,000 -- pardon me, 181,263
21 hectares.

22 MADAM CHAIR: Excuse me, where are you,
23 Mr. Freidin?

24 MR. FREIDIN: Exhibit 1645, down here,
25 look at Unclassified Forest Land, go across to the

1 right-hand side of the page 181,263.

2 Q. Is that right, sir?

3 A. That's correct.

4 Q. If we look at the note which explains
5 what unclassified forest land is it says:

6 "Area deleted by logging or natural
7 causes since the last FRI or which was
8 too young for assessment at that time."

9 I would suggest to you that by reason of
10 that note the area which is unclassified forest land in
11 this exhibit, in fact, is NSR land at the time that
12 this document was prepared. Would you agree?

13 A. That's possible, yes.

14 Q. All right. If that is correct, sir,
15 if we add the 181,263 hectares of NSR to the 77,976
16 hectares in the third column of the table, we end up
17 with a total of 259,239 hectares.

18 A. You are adding 77,000 to the 181,000?

19 Q. That's correct.

20 A. Okay.

21 Q. That would indicate the total NSR
22 then which is alleged to have existed on the date to
23 which this Exhibit 1645 applies; correct?

24 A. Correct.

25 Q. So assuming that those numbers are

1 correct, would you agree then if we take Exhibit 1644
2 and Exhibit 1645, what it shows in terms of the numbers
3 is that there was a decline in the NSR from 1972 to
4 1986 starting with 332,444 in '72, 259,239 somewhere
5 between 1980 and '85, depending upon whose information
6 is correct as to the date, and in 1986 of 176,437?

7 A. I didn't follow one of the conditions
8 that you made. If we assume that Exhibit 1645 was for
9 what date?

10 Q. For the period 1980 to '85.

11 A. If you assumed it was for that date,
12 then it would show -- and you made the assumption that
13 the unclassified forest land was in the NSR category,
14 it would show that decline.

15 Q. Okay. That's all I wanted.

16 A. I think the problem, I have anyway,
17 in examining these plans and the regeneration -- it's
18 the regeneration problem; what's going where and how
19 much of the land is being regenerated to what and what
20 working group is it going to.

21 There needs to be a better method of
22 tracking that so it's more visible.

23 Q. I understand your evidence on that.
24 I was just trying to clarify what these particular
25 exhibits indicated and I thank you for your

1 clarification and assistance.

2 The last question on miscellaneous.

3 There was some talk about shifting of areas -- or
4 shifting the working group of areas. You harvest it
5 and it is black spruce and later it shifts into jack
6 pine.

7 MADAM CHAIR: What Mr. Benson has been
8 calling unplanned conversion?

9 MR. FREIDIN: It could be planned or it
10 could be unplanned.

11 Q. I think you indicated there were some
12 cases where you harvested and it just changes working
13 group whether it is planned or unplanned. That's true,
14 is it not? That happens?

15 A. That's happen, right.

16 Q. Would you agree with me, sir, that if
17 you had a stand which was composed of black spruce and
18 jack pine, more black spruce so it was in the black
19 spruce working group, that if a fire burnt through that
20 stand you might very well end up with a jack pine,
21 black spruce stand with the jack pine being predominant
22 so you would have a different working group, now a jack
23 pine working group?

24 A. Yes, you could get a switch in a
25 working group that way.

1 Q. The second hypothetical. If you
2 started out with a jack pine and a poplar stand, would
3 you agree that you would have -- and let's say a jack
4 pine working group, you could have a fire go through
5 and because all the cones of the jack pine opened up
6 and seed you might very well end up with the same sort
7 of a stand, jack pine/poplar with jack predominant, so
8 therefore it would be the same working group in that
9 situation; right?

10 A. I'm sorry, you said the same...

11 Q. The same working group. You could
12 have fire go through a jack pine/poplar stand and end
13 up after the fire with a jack pine/poplar stand?

14 A. Yes. You could, yes.

15 Q. I suggest to you that if you had a
16 second fire go through there while that jack pine was
17 young before it was producing cones, as a result of the
18 second fire you may end up with a poplar stand with
19 very little jack pine?

20 A. That's possible.

21 Q. So those two examples, in fact,
22 demonstrate that you can have shifts in working group
23 through natural disturbance?

24 A. Yes, that's right and you can have
25 ecological shifts, if you like.

1 Q. Sure, okay. The last area and let's
2 see what we can do here about getting finished.

3 You and Mr. Martel had a discussion about
4 rules and you recall Mr. Martel was saying: Are you
5 concerned that there may be so many exceptions to the
6 rule that the exceptions will become the norm. Is it
7 that what's concerning you.

8 Do you remember that discussion?

9 A. So many exceptions to the rules
10 that -- I'm sorry.

11 MS. SWENARCHUK: Can we have the
12 transcript reference for that?

13 MR. FREIDIN: I knew you would say that.

14 Q. Are you concerned, sir, that -- all
15 right.

16 Would you agree, sir, that if you have a
17 rule - hypothetical - if you have a rule which has so
18 many exceptions to it that normally what you are, in
19 fact, engaging in are exceptions to the rule, okay, and
20 not the rule itself, I would suggest to you that that
21 means that either the rule you have is not a good one
22 or, perhaps more likely, the subject matter that you
23 are trying to regulate or manage with a rule is not a
24 amenable to being dealt with through a rule at all.
25 Can you comment?

1 A. I guess we would have to narrow it
2 down to the particular item.

3 In the forestry concept, if there are
4 certain rules that you can apply, I suppose the
5 allowable cut is an example, if you set a general rule
6 that you are trying to achieve a sustainable yield,
7 well there may be some exceptional cases based upon the
8 age-class structure of the forest.

9 If you had a method that you seemed to
10 run into more exceptions than the rule, well then I
11 would agree in that way, yes. Your rule would have to
12 be changed or modified or something to that accord.

13 I think you are mentioning another area,
14 though, if you run into an area where there is so much
15 variety that you can't set up any rule or general
16 concept?

17 Q. Would you agree that there are
18 situations where, yes, that you have an area where you
19 try to set up a rule that doesn't work, you have so
20 many exceptions that really that's a demonstration of
21 the fact that what you are trying to manage or regulate
22 is just not amenable?

23 It is so complex, for example, that it is
24 not amenable to being dealt with by rules?

25 A. Well, in the area of forest

1 management, you have to deal with certain rules and you
2 certainly have to deal with flexibility. The whole
3 idea of comprehensive planning, which really should be
4 a management plan, is to take a look at an area to try
5 to achieve particular aims, to look at the possible
6 ways to achieve that aim and evaluate them, decide, put
7 your plan into action and evaluate that plan and modify
8 it according to the results achieved by the methods
9 that you used and you learn -- should be learning and
10 applying that learning as you go.

11 Q. Okay.

12 A. So there are fixed rules, but I think
13 you can change the fixed rules as you go along, too.
14 There are certain fixed rules that you have to obey,
15 the legislated rules. When you get into other rules,
16 it can or should be more flexible.

17 Q. Okay. Thank you very much.

18 MR. FREIDIN: Madam Chair, I think I was
19 within my two day estimate and those are my questions.

20 MADAM CHAIR: Thank you very much, Mr.
21 Freidin.

22 Ms. Swenarchuk, how long will you be?

23 MS. SWENARCHUK: I will be under an hour
24 I think.

25 MADAM CHAIR: Tomorrow morning?

1 MS. SWENARCHUK: Yes.

2 MADAM CHAIR: All right, Mr. Benson, it
3 looks like tomorrow is your last day and we will start
4 at nine o'clock, so if you want to make your plans to
5 go home I expect you will be finished well before noon.

6 THE WITNESS: Thank you, Madam Chair.

7 MADAM CHAIR: Thank you very much.

8 ---Whereupon the hearing was adjourned at 3:50 p.m., to
9 be reconvened Wednesday, January 23, 1991 commencing
at 9:00 a.m.

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